SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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$200,000 Study Begun on Large TV Satellites

NASA's Marshall Space Flight Center has awarded Convair division a $200,000 contract for a comprehensive nine-month feasibility study on large television broadcast satellites for launch in the 1972-77 time period in manned or unmanned Apollo Saturn V missions.

John A. Fager of Convair's space systems Dept. 581-6 is project manager. Hughes Aircraft Co. Space Systems division will be subcontractor for communications subsystem, transmitter-to-satellite and audience assessment evaluation support.

Various TV broadcast, "second-generation" satellite configurations will be studied for coverage of areas ranging from ½-time-zone to ½-hemisphere, power transmission ranging from 2 to 250,000 watts and power generation ranging from solar panels to nuclear energy sources.

Both black and white and color TV transmission with AM and FM modulation and from UHF to higher 12-gigahertz frequencies will be evaluated for broadcast reception by antennas ranging from 10-foot "dishes" to modified home receiver "rabbit ears."

Potential users of such systems include foreign countries, U.S. educational TV systems and U.S. military services for overseas and at-sea educational and entertainment programming.

Three basic audience categories to be studied include:

1. Highly populated and industrialized areas such as in the U.S. and Europe, where extensive ground power transmission lines and other electrical "interference" would require high-gain and higher power TV transmission.

2. Densely populated but industrially undeveloped areas, including those where multiple-channel audio transmission would be required for broadcast of different languages or dialects in countries such as India.

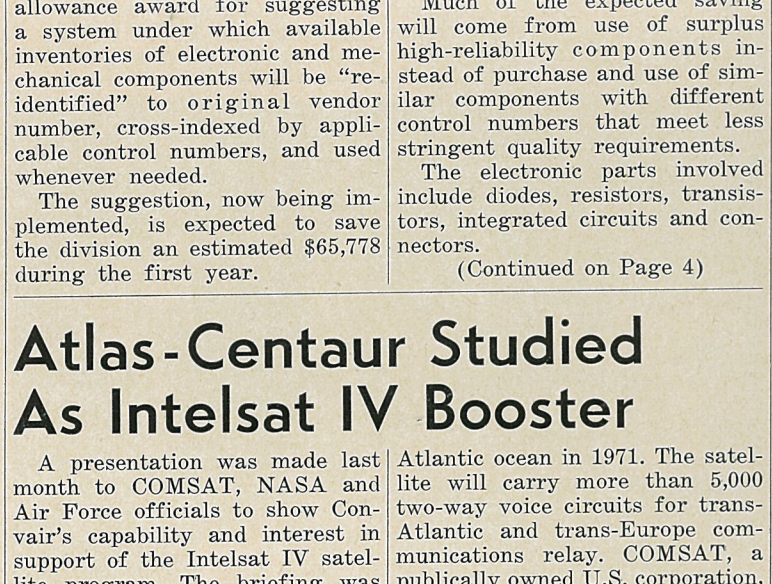
3. Sparsely populated and industrially undeveloped areas such as in South America and Africa.

Information gained from the study will be made available by NASA to federal and state agencies and industry to aid in future improvement of broadcasting.

"The work we do will apply to broad variations of future commercial, military and educational systems," Fager said.

"Use of TV broadcast satellites

(Continued on Page 4)



AWARD WINNER—H. E. Moose, left, Convair director of material, and L. A. Wood, right, material operations manager, look on as H. W. Fuller of Dept. 842-0 shows samples of surplus electronic resistors that are being "reidentified" and used as a result of his Employe Suggestion. Fuller recevied maximum $5,000 ES award.

$5,000 Check Rewards Electronic Parts Idea

A $5,000 Employe Suggestion award check was presented the week before Christmas to H. W. Fuller, a material liaison man in Convair's Kearny Mesa plant parts release Dept. 842-0.

Fuller received the maximum-allowance award for suggesting a system under which available inventories of electronic and mechanical components will be "reidentified" to original vendor number, cross-indexed by applicable control numbers, and used whenever needed.

The suggestion, now being implemented, is expected to save the division an estimated $65,778 during the first year.

A tab card file is being established to cross-index original vendor numbers with control numbers for which each part may be used. More than 200,000 cross-indexed items eventually will be included in the file.

Much of the expected saving will come from use of surplus high-reliability components instead of purchase and use of similar components with different control numbers that meet less stringent quality requirements.

The electronic parts involved include diodes, resistors, transistors, integrated circuits and connectors.

(Continued on Page 4)

Atlas-Centaur Studied As Intelsat IV Booster

A presentation was made last month to COMSAT, NASA and Air Force officials to show Convair's capability and interest in support of the Intelsat IV satellite program. The briefing was requested by Lewis C. Meyer, director of procurement and contracting for COMSAT.

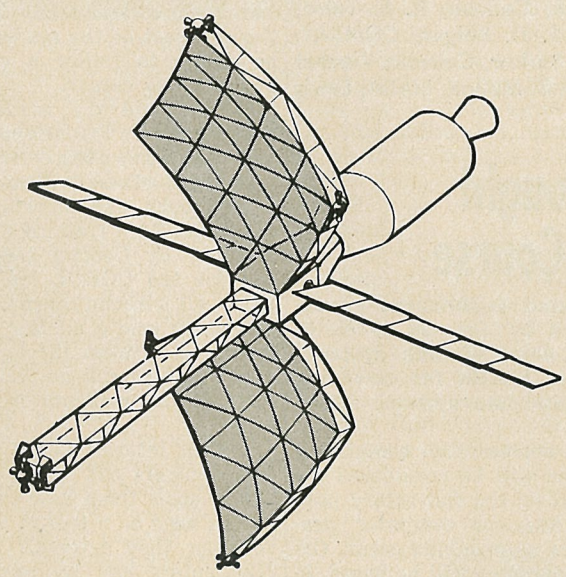
Intelsat IV will be launched into a synchronous orbit over the Atlantic ocean in 1971. The satellite will carry more than 5,000 two-way voice circuits for trans-Atlantic and trans-Europe communications relay. COMSAT, a publically owned U.S. corporation, will contract launch of the satellite for an international consortium representing more than 60 nations. Atlas-Centaur and Titan-Agena launch vehicles are being considered for the launch. The program could result in production and launch of four Atlas/Centaur vehicles through the second quarter of 1973.

Jack L. Bowers, Convair general manager, briefed visitors on General Dynamics facilities and Convair production capabilities in relation to existing programs. He pointed out that the sales forecast for the next five years is stable and would permit integration of the Intelsat IV task into existing business activities while maintaining schedules on other programs.

Grant L. Hansen, vice president-launch vehicle programs, described advantages of the Atlas/Centaur vehicles, as related to requirements of the Intelsat IV program. Points stressed were: Convair schedule capability, proven launch team capability, proven flight hardware, operational flight reliability, proven agency/contractor teams and proven performance.

Presentation material documented delivery of the last 34

(Continued on Page 2)



WIDE COVERAGE—TV broadcast satellite configuration being studied by Convair under NASA contract would broadcast to four time zones from two antenna surfaces covered with reflective mesh. Artist's drawing shows Apollo Command Service Module docked with satellite (top right) opposite antenna feed. Structures perpendicular to antennas are power-generating solar cell panels.

Twin Atlas-Centaurs Await Mars Missions

Convair division's twin Atlas-Centaur 19 and Atlas-Centaur 20 vehicles are being prepared at Complex 36 pads A and B at Cape Kennedy for launch of identical Mariner spacecraft to photograph the planet Mars.

The companion NASA launches are planned about a month apart, the first tentatively scheduled the latter part of February.

A "tiger team" from Kearny Mesa will be at the Cape the last week this month for equipment assessment and flight readiness review. Propellant tanking tests for AC-19 and AC-20 are scheduled Jan. 14 and Feb. 6.

Walt Hicks is project engineer for the twin launches, which will be conducted by the same Convair ETR launch crew. Dan Sarokon will be launch conductor.

The Mariner spacecraft are to fly within about 2,000 miles of Mars at least five days apart after a five-month journey through space when the "red planet" is 62 million miles from earth.

The fly-by trajectory planned gives 30,000 to 1 odds the spacecraft will not impact and contaminate the planet. Closest approach distance in the 1964 Mariner fly-by was 6,118 miles.

Each of the 900-pound Mariner '69 spacecraft will be equipped with two camera systems for wide and narrow-angle photographs of the planet during far and near encounter.

At least 33 pictures will be made by each spacecraft. The Martian moon Phobos may be visible in some of the full-disc photos. Objects 1½ miles in diameter may be distinguishable in the full-disc photos and objects as small as 300 yards in diameter in near-encounter photos made by the narrow-angle cameras.

The Mariners also will carry experiments to obtain information on temperatures at the Mars surface and in the surrounding atmosphere and to determine com-

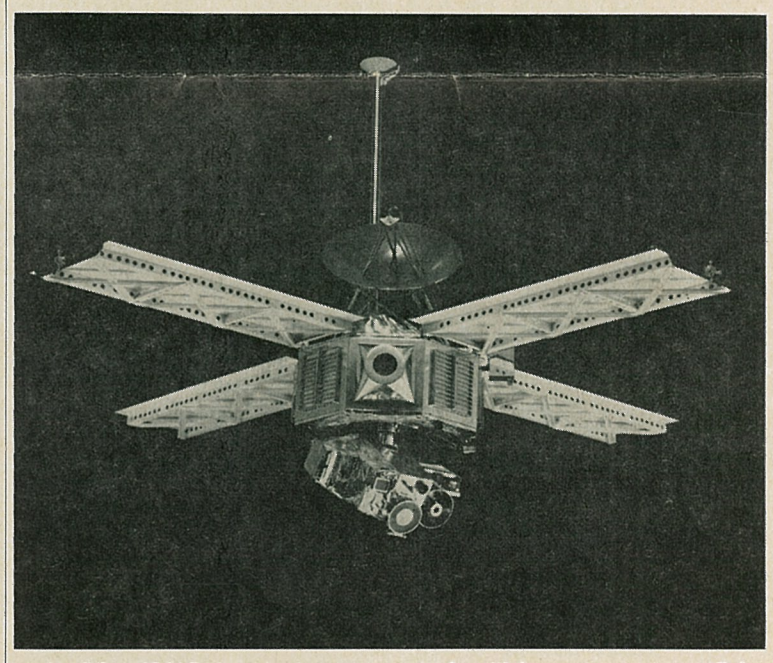
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Mgt. Club Will Hear President of Padres

Buzzie Bavasi, president of the San Diego Padres baseball club, will be guest speaker at a Convair Management Club meeting at 6:30 p.m. Jan. 13 in the Balboa Park Club.

Tickets are $2 for members and $3 for non-members and are on sale through all club boosters.

The meeting is sponsored by launch vehicle programs departpartments.



MARS MISSION—Mariner spacecraft will be sent on Mars-flyby missions by Convair division's twin Atlas-Centaur 19 and 20 launch vehicles. The two Mariners will carry TV cameras for photography of the "red" planet.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Does Convair have any provision for continuing life insurance coverage for individuals retiring at age 65?

A—Upon retirement at age 65 the individual receives a paid-up $1,000 policy at no expense to him. Employe group life insurance stops 31 days after employment terminates. It can, however, be converted (without a physical examination) to one of the regular forms of coverage written by Aetna Insurance Co. by applying within the 31-day period.

★ ★ ★

Q—Would it be possible for the Savings and Stock Investment Plan to include an option involving investment in a Mutual Fund instead of the "diversified portfolio"?

A—At the time the Savings Plan was developed a number of alternate mixes were investigated, including Mutual Funds, and it

(Continued on Page 2)

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was decided that the ones eventually chosen offered the greatest advantages to both employe and Company. Any changes are not being considered at this time.

★ ★ ★

Q—If a salaried employe chooses to retire at age 62 does he forfeit the Company's contributions to his Savings and Stock Investment Plan account?

A—Any retirement which is approved by the Company entitles the individual to the Company's contributions.

★ ★ ★

Q—Are there any plans to include dental care and maternity care for dependents in Convair group insurance?

A—All benefits, including group insurance, are reviewed regularly to ensure competitiveness. Dental and maternity coverage are being considered along with other possible improvements.

★ ★ ★

Q—Can you pay into the Savings and Stock Investment Plan while on layoff or leave of absence?

A—No. To be eligible to participate in the Plan an employe must be "regularly scheduled to work not less than 20 hours per week."

★ ★ ★

Q—What can be done about lighting the CRA tennis courts for night play?

A—Funds for this are included in the 1969-70 recreation budget request.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Dec. 21, 1968 and Jan. 10, 1969.

Thirty-year: Dept. 400, R. F. Perry; 958, N. W. Reed.

Twenty-five-year: Dept. 001, Dorothy Fischer; 002, J. E. Huke; 143, Ruby B. Dean; 196, Catherine S. Spoden; 518, H. B. Day; 519, S. V. Silva; 761, C. E. Heiland.

Twenty-year: Dept. 001, Wanda H. Holmes; 019, Evelyn N. Glasser; 145, C. F. Kosen; 195, J. L. Trenton; 250, F. J. Olin, E. T. Southworth; 400, A. S. Cwiek; 403, J. C. Hopkins; 509, O. Wade; 519, W. W. Gault; 596, E. A. Meckstroth; 758, T. W. McGuire; 842, Laura S. Hammer; 962, C. Pruckner.

Fifteen-year: Dept. 015, C. J. Popp, W. D. Valentine; 143, D. G. Clark; 149, Burnice D. Priddy; 250, P. Bourgeois, R. T. Brown, J. A. Fielder; 400, E. R. Sperl; 401, R. L. Behrens; 402, Consuelo H. Sandoval; 420, Jewell S. Falconer; 511, R. N. Myers; 533, W. J. Kiley; 562, C. H. Fischer; 588, J. W. Richardson; 780, Genevieve M. Tessereau; 958, C. C. Campbell; 986, Jeweline H. Richardson.

Ten-year: Dept. 015, R. C. Reisinger; 130, E. B. Freeman; 141, E. D. Borden; 143, S. F. Alleman, P. E. Kiernan; 146, K. McCafferty; 192, Ingeborg A. Cohn; 401, H. F. Chelf; 507, W. F. Arnold; 518, W. R. Anderson; 526, Donna L. Awrey; 567, D. E. Longwell; 574, D. C. Cook; 585, R. V. Halstenberg; 587, D. J. Peery; 589, L. E. Bolt; 731, J. D. Wadley; 732, F. Danzinger; 744, E. F. Dykstra; 810, B. J. Cendali; 835, T. E. Dobyns; 976, C. W. Grigsby; 979, C. W. Banks, R. D. Larkins, O. H. Reed, L. G. St. John, G .L. Vogel; 985, G. M. Bentley, 988, C. Nulf.

ELECTRONICS

Twenty-five-year: Dept. 465, C. B. Robinson.

Twenty-year: Dept. 105, Ivy M. Oliver; 423, Bertha A. McClure.

Fifteen-year: Dept. 391, H. L. Spieker; 422, H. E. Baldwin.

Ten-year: Dept. 102, J. H. Danenhower; 612, V. Salgado.

Rider-Driver

CONVAIR

RIDE WANTED—From Main St. and Magnolia Ave., El Cajon, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Louie 448-1260.

RIDE WANTED—Spring Valley to Kearny Mesa plant, 7 a.m. to 3:30 p.m. shift; phone Wilma Ickes, 465-8868, after 4 p.m.

SHARE RIDE—Imperial Beach to Kearny Mesa plant, 7:30 to 4:15 shift; L. A. Milton, ext. 2566 KM or (home) 424-8005.

Personals

Thank you for your kindness and sympathy following the death of Irvin J. Heckman (retired 1961).

Mrs. Irvin Heckman and family

Deaths

CONVAIR

STRAND, C. S., Dept. 031. Died Dec. 31, 1968 in auto accident while on vacation in Talahassee, Fla. Survived by a son Richard and daughter Mrs. Sally Sherwin.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Dec. 20.

Dept. 979, C. D. Amos, $15; 045, H. S. Boyd, $15; 045, A. Candelaria, $15; 733, N. Chaudion, 143, M. M. Henry, $7.50 each (joint award); 015, B. H. Davis, $69; 250, J. F. DeNeef, $15; 840, M. F. Gonzales, 001, J. Hammer, $72.10 each (joint award); 519, C. Greve Jr., $15; 250, C. J. Lewis Jr., $15; 045, M. M. Lopez, $139; 250, W. E. Majorek, $15; 031, R. Morissette, $15; 519, R. L. Plummer, $238.30; 143, R. R. Reekers, $15; 170, J. M. Roberts, $29.80; 015, E. D. Robertson, $46.30; 019, S. T. Skinner, $37; 027, J. B. Simon, $15; 840, J. E. St. John, $5,000.00; 574, C. W. Weber Jr., $38.60; 401, W. Wrieden Jr., $20.50.

Employe Suggestion awards approved for the week ending Dec. 13, 1968.

Dept. 507, K. R. Bailey, $21.80; 019, J. R. Becker, $18.80; 015, L. S. Boland III, $52.60 (two awards); 020, E. Bowers, $15; 031, A. J. Burke Jr., E. H. Roeckel, $15.45 each (joint award); 019, P. W. Downes, $15; 002, G. R. Fennell, $15; 842, H. W. Fuller, $5,000.00; 579, A. W. Hamrick, $30; 953, H. J. Hartin, $15; 141, R. Jakaitis, $15.10; 142, L. E. Johnson, $18.40; 588, R. E. Johnston, $30; 979, G. J. Kadlec, $50; 401, G. W. Kahler, $46.90.

Dept. 520, A. A. Keen, $15; 146, N. T. Keith, $15; 143, S. R. Kirchmann, $33; 015, J. P. LaLanne, $15; 507, R. H. Lewis, $986.50; 401, R. F. Lorch, $42.30; 144, E. McLeod, $18; 542, D. W. Moffat, $15; 833, J. E. Rath, $15; 979, F. M. Russell, $15; 015, L. E. Shofstall, $15; 143, D. G. Sparks, $15; 015, L. W. Tracy, $28.70; 019, E. Troxel, $15; 015, N. L. Valentino, $15; 130, N. E. Wallace, $15; 985, O. J. Washburn, $15; 833, M. M. Wood, $30; 975, J. Zorman, $134.20.

Retirements

CONVAIR

BRISBIN — Homer E., Dept. 045. Seniority date March 27, 1940, retired Nov. 27.

CHRISTENSEN — Martin, Dept. 985. Seniority date Sept. 10, 1959, retired Nov. 27.

EMMONS—Joseph R., Dept. 015. Seniority date Feb. 27, 1953, retired Dec. 31.

ENLUND—Waino J., Dept. 049. Seniority date Nov. 4, 1936, retired Dec. 31.

FACKLER — Richard C., Dept. 590. Seniority date Feb. 26, 1959, retired Nov. 29.

FARRINGTON—George L. Dept. 401. Seniority date Nov. 21, 1939, retired Dec. 31.

GUNTHORP—Onita C., Dept. 521. Seniority date Feb. 11, 1952, retired Dec. 31.

JONES—James D., Dept. 565. Seniority date Feb. 19, 1959, retired Oct. 16.

KITCHELL — Charles H., Dept. 565. Seniority date March 16, 1960, retired Dec. 15.

LANE—Robert C., Dept. 532. Seniority date Sept. 3, 1940, retired Dec. 31.

LE BEAU—Adolph J., Dept. 027. Seniority date Oct. 21, 1935, retired Dec. 30.

LEES—Forrest A., Dept. 951. Seniority date Aug. 14, 1956, retired Dec. 31.

LEPPER—Orville O., Dept. 731. Seniority date Aug. 4, 1941, retired Dec. 31.

MAROLDO—John, Dept. 019. Seniority date April 10, 1947, retired Dec. 30.

MASIERO—Angelo, Dept. 250. Seniority date July 17, 1952, retired Dec. 31.

MEER — Frank, Dept. 840. Seniority date Dec. 2, 1935, retired Dec. 31.

MIKULA—Charles R., Dept. 016. Seniority date May 23, 1947, retired Dec. 31.

NASH—Charles T., Dept. 059. Seniority date Sept. 24, 1947, retired Dec. 31.

PARCO—Damaso, Dept. 250. Seniority date July 27, 1955, retired Dec. 31.

PEACOCK — Thea O., Dept. 590. Seniority date Sept. 25, 1946, retired Nov. 27.

RABE—John D., Dept. 732. Seniority date Feb. 2, 1953, retired Dec. 31.

STACEY — John R., Dept. 142. Seniority date May 17, 1954, retired Dec. 2.

JOHNSON — Glen C., Dept. 015. Seniority date Dec. 6, 1945, retired Dec. 10.

WALKER — Henry D., Dept. 985. Seniority date June 25, 1956, retired Nov. 11.

WAWRZYNSKI — Edmund J., Dept. 401. Seniority date Aug. 12, 1953, retired Nov. 27.

WHITE—Ralph P., Dept. 831. Seniority date Aug. 9, 1957, retired Dec. 18.

ZATHAN — Georgia H., Dept. 780. Seniority date July 10, 1956, retired Nov. 27.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Atlas-Centaur Considered For COMSAT

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SLVs and all operational Centaur vehicles as scheduled.

Hansen pointed out that the past 42 consecutively successful SLV launches covered a variety of operational programs, proving Convair versatility.

Mel R. Barlow, manager of vehicle applications, outlined Atlas/Centaur performance data which indicated a payload capacity 1,370 pounds more than the 2,430 pound requirement for the program. He pointed out this advantage in the event the payload weight is increased, or if piggyback payloads are desired. He also emphasized that the two-burn Centaur has been proven in four similar operational Project Surveyor missions.

A cost and production advantage was shown in the proposed use of the flight proven OAO-type nose fairing, with only minor modifications, to shield the satellite during launch.

Attending the meeting were Dr. Joseph V. Charyk, president, Siegfried H. Reiger, vice president-technical, and Lewis C. Meyer, director of procurement and contracting, COMSAT; Vincent L. Johnson, NASA deputy associate administrator for space science and applications (engineering), and Joseph B. Mahon, NASA director-launch vehicle and propulsion programs; Dr. Mike Yarymovych, deputy for requirements, Air Force Office of Assistant Secretary for research and development; Col. Floyd Kniss, Hq. USAF air staff space directorate, and Lt. Col. A. J. Poor and Maj. John Lee of Air Force space and missile systems organization.

Others included Ronald Rovenger, NASA-Lewis resident manager at Kearny Mesa; Col. Charles F. Merz, Defense Contract Administration Services plant representative; R. E. Tatro of Corporate office headquarters, and W. C. Hill, chief of program scheduling for Convair launch vehicle programs.



CONVAIR "TEACHERS"—Convair computer specialists discussing programming course they teach for selected students at Lincoln High School, from left, are C. E. Reid, coordinator; H. J. Coffey, COBOL instructor; J. A. Doggett, FORTRAN instructor; G. O. Withem, chief of data systems for Convair who organized and administers course. Student-developed programs will be run on computers at Kearny Mesa plant.

Computer Specialists Teach Special Lincoln High Class

Four Convair division computer specialists are volunteering an evening each week for six months to present a basic course in business and scientific computer programming for 20 selected students of minority races at Lincoln High School in Southeast San Diego.

G. O. Withem, Convair's chief of data systems, suggested the pilot teaching project as a result of his work with a Boy Scout computer explorer post in the Grossmont area — and the idea received strong support from both Convair division and school officials.

C. E. Reid, Dept. 595-0 computer technicial analysis research group engineer, is coordinator. John A. Doggett, Dept. 595-0 technical programming research group engineer, teaches FORTRAN scientific programming fundamentals and H. J. Coffey, a Dept. 170-1 computer programmer, teaches use of COBOL business-oriented computer technology.

The 20 students, all high school seniors planning to attend college, were selected by their counselors and principal and attend the course as an extra-curricular activity from 7 to 9:30 p.m. Tuesdays.

Withem gives a brief presentation and shows a film on computer programming or some aspect of management at each of the class sessions. The class then separates into two groups for the COBOL and FORTRAN instruction.

Each student now is preparing a "program" to be checked out and run on Convair's CDC-6400 and IBM 360-Model 65 computers Jan. 28 during a class visit to the Kearny Mesa plant. Members of the class previously toured the Convair computer facilities during their third class session Nov. 5.

The two student groups will switch instructors Feb. 4 to begin their second seven weeks of classroom instruction in the "other" computer language.

They are scheduled to visit the Kearny Mesa plant again March 25 for running of their second individually prepared computer program.

Withem said the course, while not bound by a rigid timetable, is scheduled to conclude in April with two combined class meetings and a final review for the two separate groups.

Each student successfully completing the course and with two absences or less will receive a certificate April 20 at a dinner to be hosted by Convair division for students and their parents. There will be no formal exam or grade given.

Reid, who also serves as chairman of the Economic Opportunities Commission of San Diego County, said interest in the course has been exceptionally high although most of the students have no desire to follow a computer programmer career.

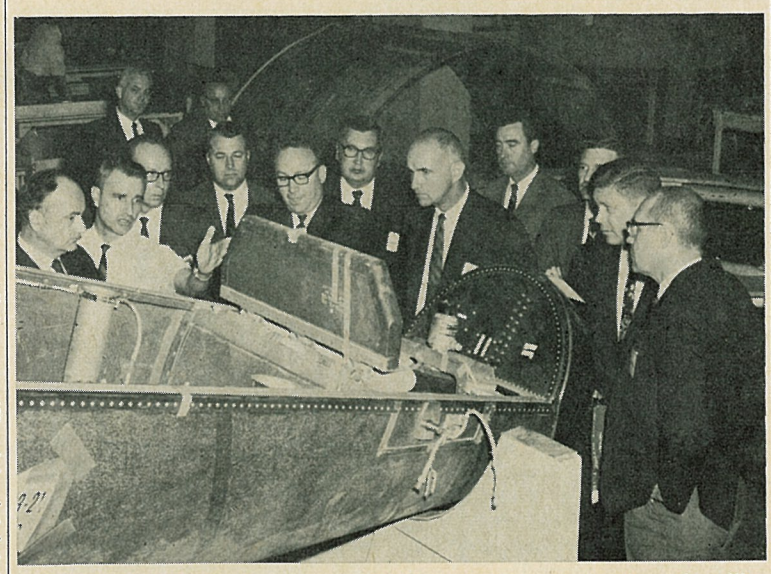
Coffey said the students see the course as a unique opportunity and an advantage to obtain knowledge others will not have.

Textbooks and workbooks for the FORTRAN training are being provided by Control Data Corp. and for the COBOL training by IBM—all without charge.

Withem said a similar training program, if taken through a private business college, would cost each of the students more than $1,500.

"Our interest is not to make programmers out of the students but to show them how computers can be used as a tool in whatever vocation they pursue," he said. "Computers can be used to an advantage in any field — from medicine to music."

Withem said if final results of the pilot course at Lincoln High are good the program may be extended to other high schools in the future.



COMSAT VISIT—Dr. Joseph V. Charyk, Communications Satellite Corp. president, and other COMSAT and NASA officials look on as Convair's Russ Thomas points out Atlas-Centaur nose fairing features. Others, from left, are Richard Clark, Convair; R. E. Tatro, Corporate Office; Ron Rovenger, NASA; S. H. Reiger, COMSAT; Jack Bowers, L. I. Medlock, W. C. Hill, Mel Barlow, Convair; Vincent L. Johnson, NASA; (left background) Joseph B. Mahon, NASA; Lewis C. Meyer, COMSAT.

Employe Applications Sought For Computer Training Course

Convair division employes with a desire to become business computer programmers may submit applications for a company-sponsored 20-week evening training program.

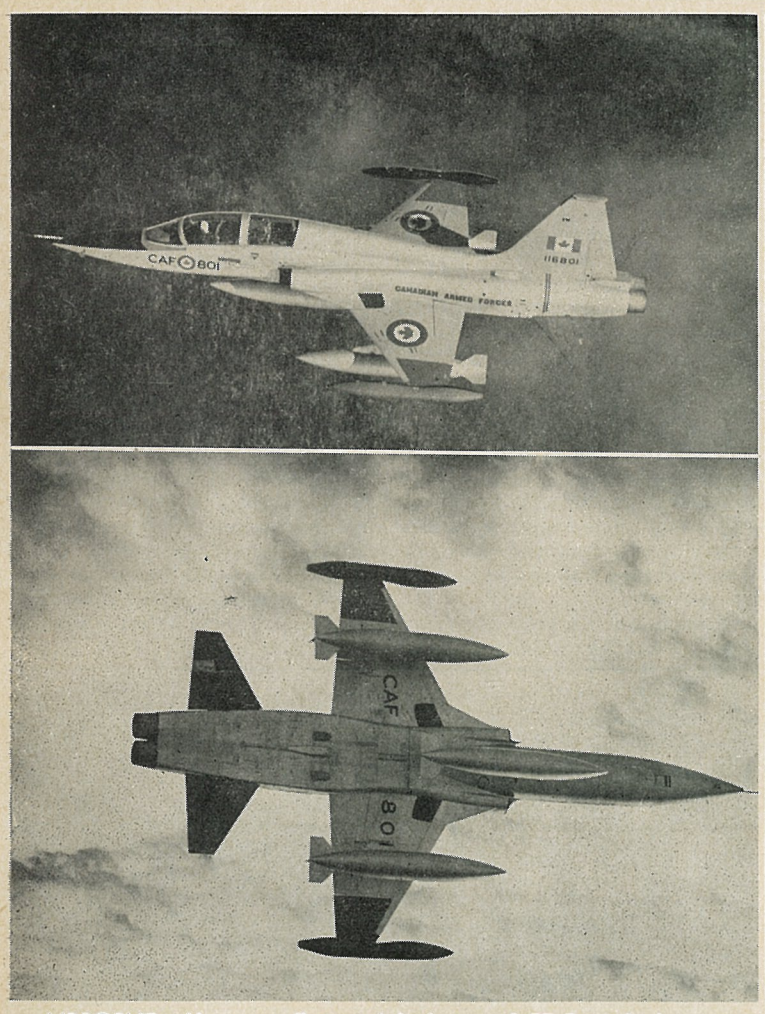
Applicants must have completed at least one course in the data processing field or have a college degree. All will be given aptitude tests.

Interested hourly or salaried employes may obtain applications from educational services offices —phone Wayne Turner, ext. 491 LF; Jim Wilkins, ext. 2474 LF (AF Plant 19), or Ed White, ext. 1931 KM.

Completed applications should be mailed by Jan. 20 to G. O. Withem, chief of data systems, mail zone 170-10, for screening by business data systems supervision.

Those successfully completing the course will be considered for placement on the flat-salary payroll as business computer programmers as openings occur. Order of placement will be based, in part, on how well the individual performed in the course.

The computer programming course will be conducted by data systems, Dept. 170-1, supervision. Educational services personnel will assist.



AIRBORNE—Here are first aerial photos of CF-5 tactical support-fighter airplane just off the production line at Canadair. They were taken during test flight over Laurentian Mountains, north of Montreal. Canadair is building 115 of them for the Canadian Armed Forces and 105 for Royal Netherlands Air Force. First delivery of a CF-5 to an operational squadron is scheduled this month.

Attacked by Mamba

Volunteer in Leper Colonies Recalls Brush With Death

Compassion for the sick and underprivileged inspired a Convair division woman to spend seven years of her life among the lepers in India and Africa.

She is Margaret Castro, a photo reproduction technician at Lindbergh Field plant, whose "highly rewarding" and profound commitment to humanitarianism almost cost her life.



LUCK AND COURAGE—Convair division's Margaret Castro displays deadly Black Mamba snake she killed after it bit her while she was cycling through rain forest in Central Africa.

Margaret, a graduate of Point Loma High School who also has attended San Diego State and the University of North Carolina, claims she was motivated after reading a book on the life of Father Damien, the leper priest.

Lack of finances proved discouraging, but, thanks to TV and press exposure about her intentions, she financed her trip through contributions from well-wishers while a student at SDSC.

Joining the Young Christian Workers, she attended the School of Tropical Medicine in Calcutta, India, for a year before being assigned to Vellore, near Calcutta, where she worked among the lepers — examining, treating and working with them on the streets and in the villages.

"Contrary to popular belief, leprosy is not as contagious as tuberculosis," Miss Castro said. "It's transmitted by physical contact with an infected person over a long period of time. People can go five years without knowing they've contracted the disease," she said. Treatment consists of cleansing skin ulcerations and the taking of daily medication.

She says lepers are apprehensive of outsiders and do not trust or confide in them unless they are convinced of their sincerity, this generally by watching them partake of meals lepers prepare for them.

After five years at Vellore, Margaret returned to the states for three months before leaving again, this time to Central Africa as a member of the Peace Corps.

She was attached to the hospital at the village of Cholo, where she helped treat TB and leper patients.

It was in Africa that she survived the bite of a Black Mamba snake, considered one of the world's deadliest and fastest. She was motorcycling through a rain forest when the eight-foot reptile "appeared from nowhere in front of me." She said she leaped from her bike, which fell on the snake, but not before the Mamba bit her on her left leg below the knee.

She killed the snake with a pen knife tied to a bamboo stake, then took serum from her knapsack and injected it into the wound.

She was able to return to the village, where hospital attendants later told her she was only the second person they had known to have survived such a bite.

Working among and helping treat lepers has given Miss Castro much fulfillment, she says, but she feels she's now ready to settle down.



Plant Air Study Produces Good Bill of Health

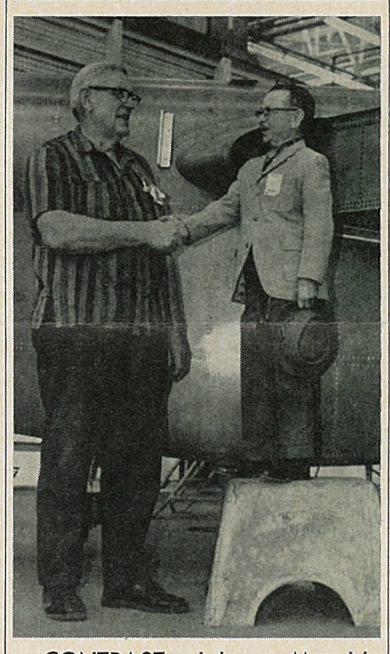
After nearly three months of exhaustive testing, a General Dynamics survey team has found that total Stromberg-Carlson plant emissions are relatively low in air pollutants.

Fred Sledzinski, senior plant maintenance engineer for Stromberg-Carlson, and H. Glenn Bradbury, senior nuclear engineer for General Dynamics' Fort Worth division, have completed an 11-week survey of 85 exhaust stacks at the Rochester plant.

"We have felt that we are one of the cleaner industries in Rochester," Sledzinski said, "but we wanted to know just what we are doing. So we began a complete and thorough study."

Clad in coveralls, the pair climbed around rooftops, stringing electrical cable, devising test equipment and adapters for components of their super-sensitive measuring instruments.

Their gear included equipment for measuring particulates (solid matter including dust, smoke or even water particles), gases and chemicals being emitted. Filters used in measuring particulate emission trapped solid matter too small to be seen without a microscope. "Bubblers" were used to dissolve gas emissions in water for chemical analysis. Chemical emissions were measured with a "sniffer" which used chemical sensitive measuring tubes.



CONTRAST—Johnny Maroldo has to ascend platform to exchange congratulations with Homer Brisbin. Convair men retired last month.

100th Shipboard Dial System Delivered

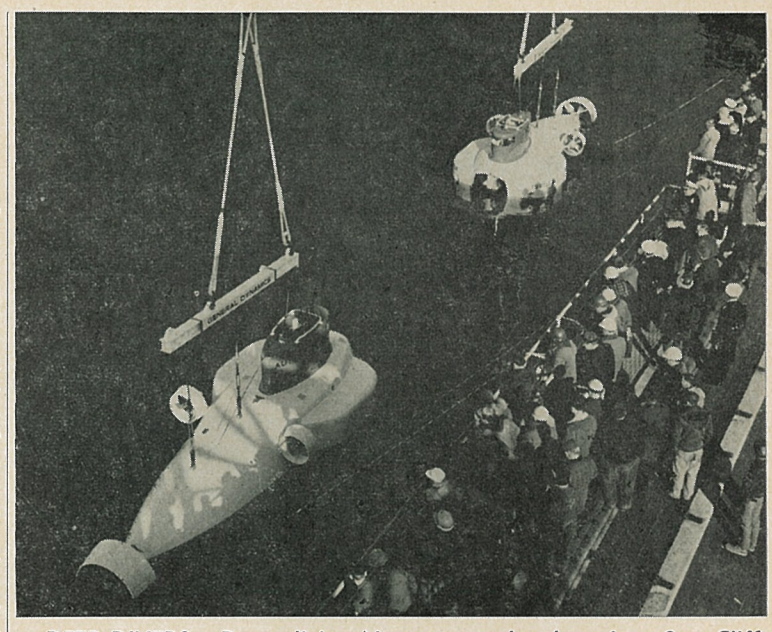
December was a milestone month for Stromberg-Carlson as the 100th shipboard dial telephone system was delivered.

Included in December shipments were two Marine Dial-X systems for installation aboard the latest nuclear-powered attack submarines for the Navy. According to Vincent F. Renda, manager, marine products G/I/I, a total of 82 of the Dial-X systems have been delivered for use aboard Polaris and attack submarines and the latest design of Coast Guard cutters.

The two Dial-X systems shipped were part of an 11-system order. All 11 will be installed aboard submarines constructed at General Dynamics' Electric Boat division, as well as at Mare Island Naval Shipyard.

Stromberg-Carlson's marine dial systems are in use on a variety of Navy and Coast Guard tactical vessels. In addition to submarines and cutters, ships such as Apollo tracking vessels and aircraft carriers are equipped with S-C systems.

Stromberg-Carlson marine dial telephone systems are designed to offer capacities ranging from 40 lines for small vessel use up to 700 lines for installation in giant aircraft carriers.



DEEP DIVERS—Deep-diving Navy research submarines Sea Cliff, left, and Turtle are lowered into the Thames River at Groton, Conn., after recent christening ceremonies at Electric Boat division.

Vast Area of Sea Floor Opened to Exploration

Launching by Electric Boat division of the deep-diving research submarines Sea Cliff and Turtle (formerly AUTEC I and AUTEC II) will permit the Navy "to investigate 16 per cent of the ocean floor or an area equivalent to the surface of the moon."

So said RAdm. Thomas B. Owen, USN, Chief of Naval Research, at recent launching ceremonies of the submarines at Groton, Conn. The two 21-ton subs, which can dive to depths of more than a mile, were lowered into the Thames River by two giant gantry cranes. Both boats are 26-feet long and equipped with emergency escape systems.

Admiral Owens said that, at test depth, the personnel spheres of the subs must withstand 30,000 tons or the weight of five Fleet Ballistic Missile subs.

Both boats are equipped with television monitors, cameras, lights, sonar, gyrocompass, fathometer and surface and underwater communication systems.

Each has two hydraulically powered manipulator arms which can pick up as much as 100 pounds at full reach. The arms can be fitted with numerous tools while submerged from a built-in storage bin. They can operate at speeds up to 2.5 knots and remain submerged for eight hours.

They are the sixth and seventh research submarines to be built by General Dynamics and the first research subs to be built to military specifications.

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STAR II on Continuous Call For Offshore Oil Field Missions

Capabilities of General Dynamics' research submarines have been broadened by a series of successful "work-boat" operations by STAR II with the off-shore oil industry in the Santa Barbara Channel off California.

Designed as a Submarine Test and Research (STAR) submersible, STAR II recently performed two emergency tasks that will open new horizons for the sub in a working capacity.

Lou Fead, STAR II's lease manager, said the two-man sub, built and operated by General Dynamics' Electric Boat division, successfully aided and guided the recovery of a fallen marine riser in 575 feet of water and a fallen blowout preventor stack in 530 feet.

These were the first successful physical or "work-boat" operations performed for the off-shore oil industry, according to Fead. Consequently, he said the sub now is performing other working tasks, including cutting cable.

STAR II presently is based at Goleta, near the Santa Barbara Airport, where it is standing by for instant call to perform tasks in the oil fields, ranging from routine surveys and inspections to equipment recoveries at depths of up to 1,200 feet.

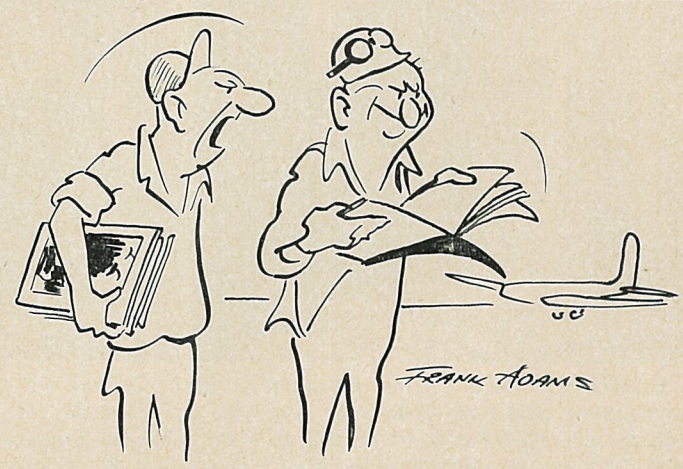
Recoveries are made by the sub's manipulating arm, which can perform a variety of lifting jobs. STAR II is piloted by Bill De Court. Mike Ida recently joined the group as a future pilot.

Zero Defects Report Circulated by DOD

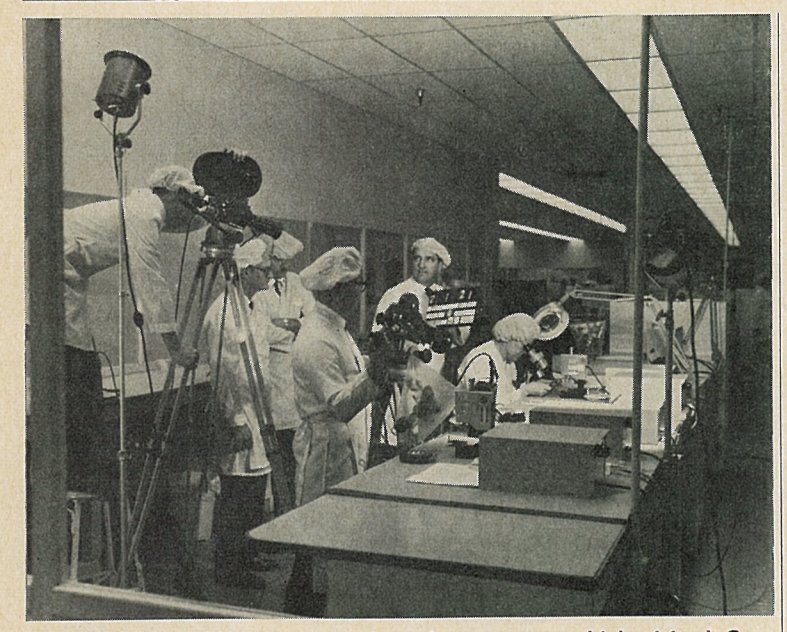
A 35-page paper by J. Y. McClure, vice president-quality assurance for Fort Worth division, is included in a new Department of Defense technical report, "Zero Defects—The Quest for Quality."

McClure's chapter, titled "Detailed Guide for Program Planning," gives a step-by-step explanation of Zero Defects programs and their organization and administration—ranging from goal setting and external-internal interfaces to awards and promotions. A comprehensive program checklist is included at the end.

George E. Fouch, deputy assistant secretary of defense, in a cover-letter published in the 232-page report, said purpose of the publication "is to stimulate ideas and encourage programs aimed at improving the quality of manufactured products and of services."



"It's a booklet on the romance of flight . . . and you can stop searching for the center fold photo. . . ."



DOCUMENTARY—Army motion picture crew, which visited Convair's Kearny Mesa plant last month, films Pauline Tasch, Dept. 780-1 electronics assembler, welding integrated circuit to mylar film. Others, from left, are cameraman SP/4 Dave Plenn; Eric Herz, Convair Range Management System-2 engineering manager; Richard Moore, Dept. 780 supervisor; cameraman SP/6 Harvey Robbins; William Poulos, director. Work on RMS-2 components was filmed for inclusion in documentary film.

Army Team Visits Kearny Mesa To Film Production of RMS-2

An Army Combat Developments Command Experimentation Command (CDCEC) motion picture crew from Ft. Ord, Calif., was at Convair's Kearny Mesa plant one week last month to photograph division employes at work on Range Measurement System-2 components for use in a documentary film on the system.

Convair designed and is producing the Army RMS-2 system for CDCEC for future use at the Hunter Liggett Military Reservation in field experiments to evaluate effectiveness of present and future combat equipment and tactics.

The documentary film for indoctrination and training use will cover various facets of the system, ranging from conceptual design and hardware production and testing at Kearny Mesa to its use under varied field conditions.

Precise location of field units can be determined and digital-signal messages transmitted through use of the RMS-2 transponder units and interrogation, distribution and computer-equipped central control stations.

C. E. Wilson, Convair RMS-2 program manager, said eight division employes will be on full-time assignment at Hunter-Liggett through February for running of RMS-2 systems acceptance tests.

$5,000 Check Rewards Idea For Electronics Parts System

(Continued from Page 1)

Control numbers for many of the parts have been changed several times. Each is being "re-identified" to its original vendor number through original source documents, with the cross-referencing system to show other control numbers for which it may be substituted.

Parts engineering personnel are assisting with implementation of the suggestion, which already has eliminated unnecessary purchasing of several thousand new parts.

H. E. Moose, Convair director of material, presented the ES award on Dec. 18. "I can't think of a better Christmas present," he commented.

Fuller has been with Convair's material department 12 years as a stock handler, material requirements man, ordering analyst, release analyst, records analyst, federal item identification analyst and material liaison man.

He is a member of the Convair Employes' Con-Trib-Club committee and formerly served three years as CRA basketball commissioner and coach for Convair teams in the City League.

A former San Diego City College and "All-State" basketball star, he now keeps in shape with other material department "old timers" by playing on the Sweat Sox team in a Clairemont Community Center league.

Fuller's ES award was the second maximum - allowance award for material department employes during the past two years. Thomas K. Bishop, Dept. 810-0 senior buyer, received a $5,000 award in 1967 for a suggestion that eliminated special packaging requirements for certain types of hardware.



CONTRACT TALK—Frank Chambers, right, Convair division's manager of contracts, goes over item with J. F. Daniels, left, who recently assumed duties at Lindbergh Field plant as Douglas Aircraft Co.'s major subcontract resident manager on DC-10 program. Participating in discussion, from left standing, are Convair's Ed Pawka, chief of contracts, and George Vetter, contract administrator.

$200,000 Study Begun on Large TV Satellites

(Continued from Page 1)

will eliminate regional reception problems, particularly in mountainous areas of the west and Appalachia, where current ground and microwave systems are lacking.

"Potentially, upgrading and equalization of educational systems across the country can be performed economically through ETV satellites. Some of the cost can be offset by other savings. Educational TV systems in the U.S., for example, are spending $15 million a year in postage fees for mailing of films and can not provide the broad or real-time instruction possible through satellite TV."

Convair's study will be conducted in three phases.

The first will involve detailed parametric analysis of factors affecting the satellite system and will utilize a unique Convair-developed OCCOF (optimum compromise between conflicting operational factors) computer program.

Optimum satellite configurations will be defined, critical development areas noted and costs analyzed in the second phase.

Preliminary design and analysis of NASA-selected configurations will be conducted in the third phase. General spacecraft sizing and subsystems study in sufficient detail to confirm weight and cost estimates will be included.

Fager said Patrick Bergin and Dr. Matthew Nilson are handling audience evaluation and application studies—including discussions with foreign country UN representatives and educational TV officials.

Other key personnel and areas of responsibility include David Forest, configuration control; Dr. Robert Norbutas, systems simulations; Tim Johnson, economic analysis; McLain Downing, attitude control; E. T. Lipscomb, electronics systems analysis, and Ray Garriott, antenna studies.

Convair has pioneered development of self-expanding antennas for use in space and has conducted several previous antenna studies for NASA and the Air Force.

Tests currently are being performed on components of a 70-foot-version of the parabolic expandable truss antenna (PETA) under a NASA-Marshall contract to be completed in June.

Fager said Convair recently proposed development of 30-foot self-expandable antennas for use on future Applications Technology Satellite missions.

F-111 Support Wins Praise For Convair

Jack L. Bowers, Convair general manager, has received a letter from R. W. McGuffee, manager of F-111 logistic support for Fort Worth division, expressing appreciation for Convair's work on F-111 aerospace ground equipment (AGE).

"During a recent visit to Nellis Air Force Base, I had an opportunity to discuss with Air Force personnel the quality and reliability of 111 AGE equipment being supplied by the Convair division," McGuffee wrote.

"I was most pleased with the comments that the Air Force made. They expressed complete satisfaction that the AGE equipment being furnished by Convair division was of excellent quality and workmanship, and that reliability and configuration control were readily evident when the equipment was put into use in the A&E shop.

"Speaking for the Fort Worth division, I wish to express our appreciation to you and your employes for the effort . . . to assure a quality product."

Tuition Refund Allowances Boosted to Meet Cost Rise

Tuition refund limit for Convair division employes taking job-related courses from accredited colleges or universities was increased from $225 to $300 per year effective Jan. 1.

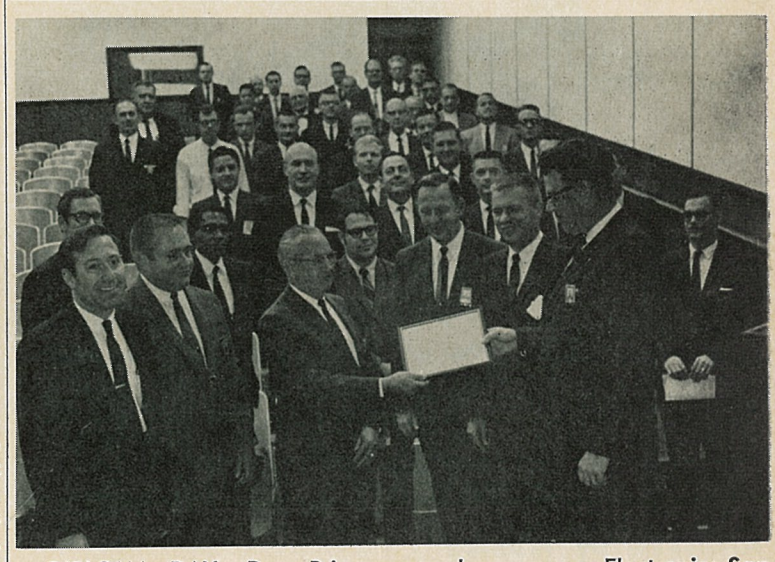
Employes working on approved advanced-degree programs also may be reimbursed by the division for 75 per cent of tuition costs above the $300 limit.

Jack Croft, chief of educational services, said the tuition refund limit increase was approved recently by division officials to help offset tuition increases by educational institutions and to stimulate increased college-level study by employes.

Tuition refund requests (form A346) must be submitted to educational services within three weeks after classes begin and must be signed by the individual's supervisor to certify the courses being taken are job-related and of benefit to the division.

When refund is approved, a signed copy of the form is returned to the employe. After completion of the course, the employe submits a copy of an official school grade report, indicating a "C" grade or better, to educational services. The tuition refund payment then is authorized and included in one of the employe's regular payroll checks.

Refund is made for tuition only and does not cover cost for books, supplies, student activity fees or parking.



DIPLOMA DAY—Don Prim, general manager, Electronics-San Diego operations, right, presents certificate to Sterling Smith, one of 37 to complete two-week Value Engineering Workshop Seminar. Participating in ceremonies at LF Bldg. 5 auditorium were, from left, Saul Lepen, VC administrator; Frank Hickey, assistant to the general manager; George Leesch, manager of industrial relations; Everett Lindem, educational services, Convair.

Electronics, Convair Men Finish Value Engineering Seminar

Thirty-three Electronics division men and four from Convair division were presented certificates upon completion of a two-week Value Engineering Workshop Seminar, the first sponsored by Electronics value control.

Don Prim, Electronics general manager, presented certificates to the men at graduation exercises Dec. 19 in the Bldg. 5 auditorium at Lindbergh Field. He also delivered the closing address.

Everett Lindem of educational services, Convair, was workshop coordinator and instructor.

Project leaders were Saul Lepen, value control administrator who, with Lindem, helped coordinate the workshop; M. M. Reeder, Jack Murray and W. W. Lynt.

The class was divided up into eight teams with each working on a specific value engineering project. Results of their work showed that, if all presentations were adopted, savings in excess of one million dollars could be realized.

Projects included three on PPS-10 lightweight radar, two on F-111 radar checkout and others on airborne radar power supply, space transponder and airborne radar sync chassis.

Members of workshop teams and department numbers:

Team 1—J. H. Kirst 612, B. A. Ledbetter 427, J. G. Robinson 465, C. C. Smith 612.

Team 2—F. S. Acomb 464, J. Hangartner 616, M. J. Leeds 614, Karl Schaefer 416, R. T. Bauman 834-20, Convair.

Team 3—F. E. Berger 582, R. A. Giles Jr. 426, G. Goddard 612, S. B. Harkey 711, H. H. Wilson 465.

Team 4—T. G. Dugger Jr. 465, F. Hope 612, D. Kinnaird 612, L. J. Moran 423, D. H. Roll 711.

Team 5—J. P. Ackerman 614, F. P. Sargent 562, A. K. Shriver 616, J. T. Welch 426, J. S. Comber 561-0, Convair.

Team 6—L. Devigilli 612, W. W. Ross 582, J. R. Sheppard 921, S. S. Smith 921, F. E. Pierce 561-0, Convair.

Team 7—R. D. Bergeron 612, D. K. Engbretson 612, W. R. Gordon 059-0, Convair; S. P. Weston 465.

Team 8—E. J. Elie 423, S. E. Lou 612, W. Vick 612, D. R. Worley 204.

Collection in Pool Nets $30 For Needy

Coins collected from the Bldg. 2 reflection pool at Convair's Kearny Mesa plant last month, totaling $30.60, was given to the San Diego Police Department special fund for Christmas purchases for needy families.

Floating toys placed by employes in the reflection pool at Kearny Mesa during the two weeks before Christmas were turned over to the Salvation Army.

Twin Atlas-Centaurs Poised For Missions

(Continued from Page 1)

ponents of the upper and lower atmosphere.

A celestial mechanics experiment will enable scientists to refine data on earth and Mars orbits, Mars mass and earth-moon mass ratio.

One of the spacecraft will be targeted for fly-by of Mars nearest its southern polar cap and the other nearest its equator.

Jet Propulsion Laboratory has project responsibility for the Mariner spacecraft. Tracking and communications will be provided by NASA Deep Space Network stations.

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Convair ETR personnel did a yeoman job in cleaning and refurbishing Complex 36-B between the Dec. 7 AC-16 launch and the AC-20 erection Dec. 11.

Working on mechanical and electrical refurbishment over the weekend under the direction of Lou Turcot, a launch operations supervisor, were C. F. Dean, J. T. Hazelgrove, P. W. Heasley, W. R. Murray, H. E. Tumblin, R. L. Schneider, L. N. Thompson, C. E. Clyburn, J. E. Herrell and R. W. Chapman.

Refurbishment tasks during regular work shifts Monday through Wednesday were handled by crews under Ken Taylor, a launch operations supervisor.

Launcher alignment and checkout was under the direction of D. K. Sato, a senior systems engineer, with mechanics P. W. Kellett and R. E. Baxter assisting.

Eight Evening College Classes Will Be Offered In-Plant

Eight 17-week spring-semester San Diego Evening College courses providing credit toward the "Certificate in Supervision" will be offered at Convair's Kearny Mesa and Lindbergh Field plants beginning Feb. 10.

Successful completion of 10 courses in the curriculum is required for the certificate. The first group of about 20 Convair employes will complete requirements for the certificate in June.

Spring semester in-plant courses, listed by title, time, location and instructor, are:

Introduction to Supervision — 4 to 7 p.m. Wednesdays beginning Feb. 19, Bldg. 14, Rm. 8, LF, Hal Rubin.

Basic Psychology for Supervisors—4 to 7 p.m. Mondays beginning Feb. 10, Bldg. 14, Rm. 8, LF, Hal Rubin.

Effective Writing for Supervisors—4:30 to 7:30 p.m. Mondays begnning Feb. 10, Bldg. 17, Rm. 1, KM, Bill Burris.

Personnel Administration for Supervisors — 4:30 to 7:30 p.m. Tuesdays beginning Feb. 11, Bldg. 17, Rm. 1, KM, Jack Croft.

Advanced Industrial Economics —Section 1, 4 to 7 p.m. Mondays beginning Feb. 10, Bldg. 14, Rm. 7, LF; Section 2, 4 to 7 p.m. Thursdays beginning Feb. 13, Bldg. 14, Rm. 7, LF, Dave Chigos.

Production Planning — 4 to 7 p.m. Tuesdays beginning Feb. 11, Bldg. 14 auditorium, LF, Wes Magnuson.

Human Relations—4:30 to 7:30 p.m. Wednesdays beginning Feb. 19, Bldg. 17, Rm. 1, Dave Chigos.

Advance enrollment is now being taken at educational services offices. For additional information, phone 1931 KM.

CRA Sponsors Europe Tour

Plans for a CRA-sponsored 22-day "Europe Grand Tour" will be outlined for interested employe families at a meeting at 7:30 p.m. Jan. 15 in Room C at the CRA Clubhouse, Kearny Mesa.

The tour group will leave San Diego on May 17 and take a Scandinavian Airlines jet polar flight to Copenhagen. Major cities on the tour will include Brussels, Heidelberg, Lucerne, Innsbruck, Venice, Florence, Rome, Pisa, Nice, Paris and London.

Cost of $839 will include accommodations at tourist-class hotels.

A cruise on a Rhine River steamer, a tour of Vatican City and changing of the guard at Buckingham Palace will be among sightseeing highlights.

Discussion Centers On Noise Criteria

Gordon Getline, a design specialist at the Lindbergh Field plant, will represent Convair division on an industrial committee that will meet with the FAA later this month to discuss noise criteria for helicopter and V/STOL commercial airplanes.

Recommendations of the Aerospace Industry Association's propulsion committee will be evaluated by the FAA as a basis for adopting policies and procedures.

Getline previously chaired a subcommittee of the Society of Automotive Engineers' committee on aircraft exterior noise, one of the major groups working to alleviate annoying effects of aircraft noise.

Second-Shift Hoop League Proposed

A special slow-break basketball league for second-shift employes will be organized if interest warrants.

Pete Beyrer of CRA said four teams will be needed to form the new league. Games would be played at noon Tuesdays and Thursdays in the Municipal Gym in Balboa Park.

Representatives of groups wishing to play should phone Beyrer, ext. 1111 KM, by Friday (Jan. 10).

Tjersland Teaches Decision Courses

Dr. Tore Tjersland is teaching two "Statistical Decision Theory" courses at Convair's Kearny Mesa plant beginning this week for employes working toward a Master of Science in Management Science degree through California Western University.

Sixty-three division employes have completed two or more of the nine courses required for the degree.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Feb. 1. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard.

PRAISE CONTINUES FOR OAO SUCCESS

Convair division last month continued to receive commendation for the Atlas-Centaur 16 launch of NASA's Orbiting Astronomical Observatory.

Jack L. Bowers, Convair general manager, received the following letter from John E. Naugle, NASA associate administrator for space science and applications:

"Congratulations on the splendid performance of the Atlas-Centaur for OAO-A2. I want to thank you personally and ask you to extend my thanks to Grant Hansen and all the people at General Dynamics for the work and care which assured the success of this most crucial mission.

"Now that OAO is safely in orbit, we are looking forward to the same dedicated performance by your people on the Mariner '69 and future Centaur missions with confidence of continued success."

Curator of Mammals To Speak Jan. 13

"Quality—Aardvarks to Zebras" will be topic for a "ladies' night" dinner meeting of the San Diego section of the American Society for Quality Control at 6:30 p.m. Jan. 13 in the San Diego Zoo restaurant.

Dr. George H. Pournelle, curator of mammals for the San Diego Zoological Society, will discuss quality aspects in the selection, handling and care of animals destined for life at the zoo.

Convair division will be sponsoring company.

Tickets may be obtained from section boosters or by phoning C. L. Marks, ext. 2370 KM.

Deadline Is Today For Gulls Tickets

Today is the last day to purchase reduced-price tickets at CRA outlets for the Jan. 11 San Diego Gulls hockey game with Seattle. Tickets are $2.25 each, a 75-cent saving.

Tickets also can be obtained at CRA outlets for the 6 p.m. Jan. 19 "Holiday on Ice" performance at the Sports Arena. Cost is $4 and $2 for adults (a $1 saving) and $2.50 and $1.50 for children under 15.

Sq. Dancing Class To Start Tuesday

A beginners' square dance class will start Tuesday, Jan. 14, 8 p.m. in the CRA Clubhouse. Registration will be taken that evening, as well as sessions on Jan. 21-28.

Clark Elliott of the Dynamic-Eights will be caller. A donation of 50 cents per lesson is being asked. Additional information can be obtained by contacting J. B. Young at ext. 2440, LF.

Wives to Hold Variety Show

Convair Wives Club has scheduled a variety show for members, husbands and guests at 8 p.m. Jan. 25 in CRA Clubhouse auditorium.

Entertainment will be provided by "The Galley Slaves," a 32-piece kitchen-band, "The Outward Cry," a three-piece folk-group, and "The Tri-Tones," a trio with piano accompaniment.

The show will be open to the public. Reservations can be made by phoning Mrs. Marge Allen, 583-2868, Mrs. Anita Klepach, 264-1013, or Mrs. Helen Ramberg, 277-7603. Refreshments will be served.

A program on San Diego's 200th anniversary celebration will be presented at the Wives Club's monthly luncheon next Wednesday (Jan. 15) at Harold's Fifth Avenue restaurant. Reservations should be phoned by noon Monday to Mrs. Allen or Mrs. Klepach. Cost for the luncheon is $2.25.

Wives attending the club's potluck luncheon and crafts session at 10:30 a.m. Jan. 22 should bring their own table service and a home-prepared dish from a favorite recipe. Bread, butter and coffee is furnished.

Club members will meet at the Old Town Candle Shop at 10:30 a.m. Jan. 29 for a tour of Old Town. A card party is scheduled at 10 a.m. Feb. 5 in CRA Clubhouse and members of the club will have lunch aboard the Star of India maritime museum ship Feb. 14.

Pledges and Grants Of $7,255 Approved

Convair Employes' Con-Trib-Club committee in its Dec. 13 meeting approved a pledge and grants totaling $7,255 for five community service agencies.

An additional $4,000 was pledged to United Fund of Brevard County at request of the Florida employes' advisory committee.

Grants approved were $2,000 for Muscular Dystrophy Associations of America for purchase and repair of equipment, $580 to the Flying Samaritans for purchase and repair of equipment, $500 to the Society for Brain Injured Children of Florida, Inc., and $175 for Bayside Settlement House for use toward cost of repairing a truck.

Adventurers Slate Mountain Outing

The January outing for CRA Adventurers will be a family overnight car camp in the Fish Creek Mountain area of Anza-Borrego State Park, Jan. 24-25.

Driving distance from San Diego is 92 miles with members rendezvousing 9 a.m. Saturday at Ocotillo Wells near the Fish Creek Ranger station.

Hikes are planned in the area Saturday and a pancake breakfast is set for Sunday morning.

Those making the trip should bring water and firewood.

$1.25 Saving Offered For 'Holiday on Ice'

Convair Management Club boosters have reduced-price tickets for the 8 p.m. Wednesday, Jan. 15, "Holiday on Ice" performance at San Diego International Sports Arena.

Adult tickets are $3.75 and $2.75 (a $1.25 saving on each) and some $2.50 children's tickets are available at $2 each.

Magazine Publishes Fastener Series

Assembly Engineering magazine in January and February issues will publish the last two in a five-part series of articles written by Clarence Smith, Convair design specialist.

The series is entitled "Frontiers in Fastener Design." The first three dealt with design theory and the last two with test results.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Jan. 14. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Slide lecture "Snow and Ice Climbing," Jan. 15, 7:30 p.m. Car camp to Fish Creek Mountain area, Jan. 24-25.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BASKETBALL — Second shift slow break league forming. Call Pete Beyrer, ext. 1111 KM.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting Jan. 19, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meet each Tuesday and Thursday, 7-10 p.m.

CHESS — Play each Wednesday, 7 p.m.

CHORUS — Rehearsals 7:30 p.m., Mondays.

COINEERS — Now meet second Monday each month, CRA Clubhouse. Next meeting Jan. 13, 8 p.m.

FENCING — Workouts and instruction Friday, 7:30-10 p.m.; YWCA, 10th and C Sts.

FISHING CLUB — Fishing trip to Lake Jennings, Jan. 11-12. Meeting Tuesday, Jan. 21, Gillespie Field Clubhouse. Potluck 6:30 p.m.; meeting 7:30.

GARDEN CLUB — Meeting tonight, 7:30 p.m., Floral Bldg., Balboa Park.

GOLF — Monthly tourney at Bonita, Jan. 25-26. Call LF ext. 511 for starting times.

HEALTH CLUB — Open 9:30 a.m. to 10 p.m., Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

HI/FI MUSIC — Meeting Jan. 14, 7:30 p.m.

ICE SKATING — GD family skate nights Thursday, 6:15 to 7:45 p.m. Mission Valley Ice Arena.

JUNIOR SCIENCE — Meeting and workshop Jan. 17, 7:30 p.m.

MINIATURE RAILROAD — Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD — Work sessions each Tuesday, 7 p.m., CRA Missile Park.

RADIO CLUB — Meeting Jan. 16, 7:30 p.m.

SCULPTURE — Workshop sessions each Monday, 7-10 p.m.

SQUARE DANCE CLUB—Beginners class starts Tuesday, Jan. 14, 8 p.m. in CRA Clubhouse.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

WIVES CLUB — Variety show, Jan. 25, 8 p.m. for members husbands and guests.

Three to Compete In Marathon Run

Three CRA runners—Lane Cowgill of Dept. 986-3, Wayne Groesbeck of Dept. 551-3 and Cliff Dismuke of Dept. 101-2—will compete in the 26-mile 385-yard Mission Bay Marathon to begin at 9 a.m. Saturday (Jan. 11).

CRA Bicycle Club members will meet at 8:30 a.m. at Belmont Park and serve as escorts for the marathon, keeping the running course clear of vehicles and pedestrians.

Bike Club members wishing to assist are asked to register with Cy Campbell, ext. 2056 KM or (home) 466-1881, as soon as possible.

More than 150 distance runners are planning to run in the marathon.

Lake Jennings Goal For Fishing Club

Convair Fishing Club members will travel to Lake Jennings Jan. 11-12 for their first monthly outing of the New Year.

A fish fry and potluck is planned for Saturday evening, 4 p.m. in the campground on the North side of the lake where the CRA Fishing Club banner will be displayed.

Snow, Ice Climbing Lecture Scheduled

A slide lecture, "Snow and Ice Climbing" will be presented by Tony van den Akker to CRA Adventurers, Jan. 15, 7:30 p.m. in the CRA Clubhouse.

The program will cover snow climbing equipment and techniques, and snow and glacier characteristics.

Coineers Changing Time and Location

Convair Coineers Club meeting time and location has been changed to 8 p.m. the second Monday each month in the CRA Clubhouse auditorium at Kearny Mesa.

Theme for the meeting Monday (Jan. 13) will be "exhibitor's choice" and all members and guests have been invited to bring displays.

Fourteen Earn Button Awards

Fourteen Convair sportsmen qualified for Southwest Anglers button awards for catches and bags during 1968. Awards will be made at the Fishing Club's regular meeting Jan. 21 at the Gillespie Field Clubhouse.

Qualifying for button awards were:

Sam Hampton, 147 lb. dressed deer; Jack Bowen, 5 lb. largemouth bass; Robert Hale, 4/4 points deer; W. J. Burdette, 11 lb., 5 oz. barracuda; Stuart Williams, 150 lb. marlin; A. E. Clauss, 12 lb. corvina; Lynn Schultz, 10 lb., 8 oz. bonita; Viola Davidson, 50 lb., 4 oz. salmon (new Southwest Angler record); A. E. Ramsey, 25 lb. albacore and 9 lb. 4 oz. skipjack; Ruth Menzie, 14 lb. 2 oz. corvina; R. W. Menzie, 12 lb. 4 oz. corvina; Lillian Poche, 5 lb., 8 oz. largemouth bass; and Phillip Poche, 7 lb., 2 oz. catfish.

Explorer Spanish Course Offered

General Dynamics employes may get a history as well as a Spanish lesson if they enroll in a TV course entitled "Explorer Spanish."

Offered by San Diego City School's Adult Education Department and a local TV station, the half hour Saturday lessons began Jan. 4, 7 a.m. and will be repeated later in the week.

Jim Hardison, Convair Dept. 113-0, will instruct.

Cost of $4 includes a book of selected readings of Spanish explorers. To register, call the Adult Education Department, 233-2181, ext. 51.

Translators Sought For Danish, Swedish

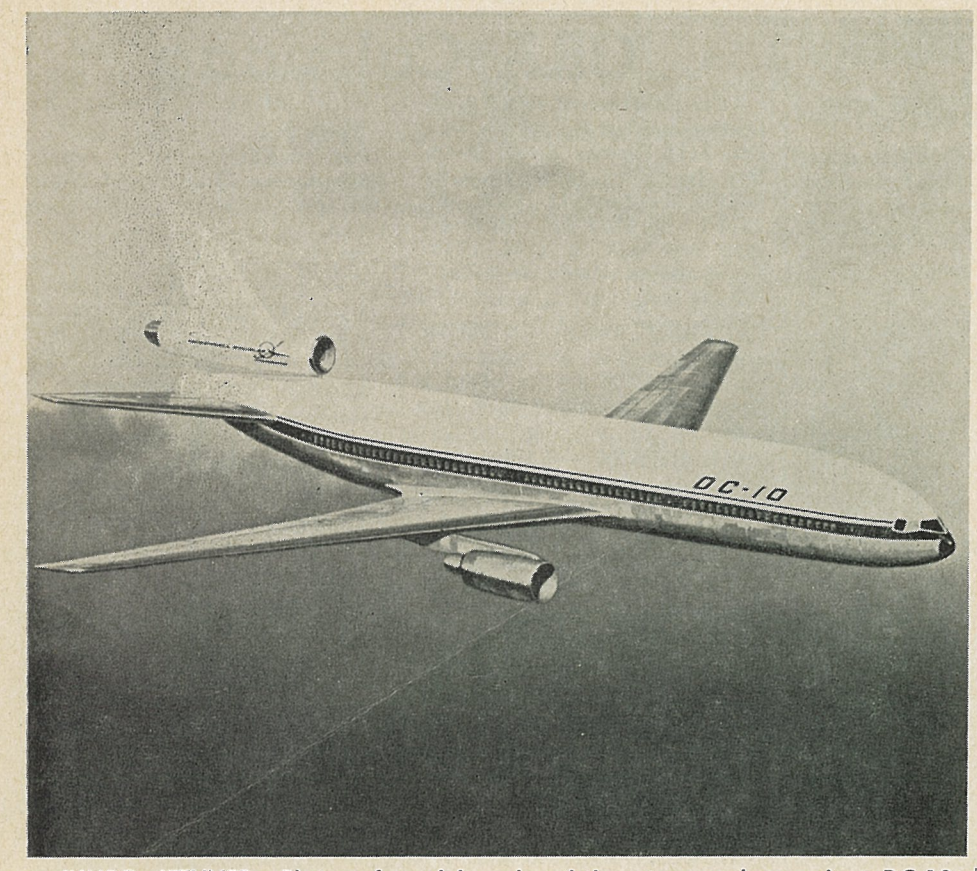
Convair's technical libraries need names of division employes who can be called upon to translate correspondence and technical publications from Danish, Swedish and Norwegian.

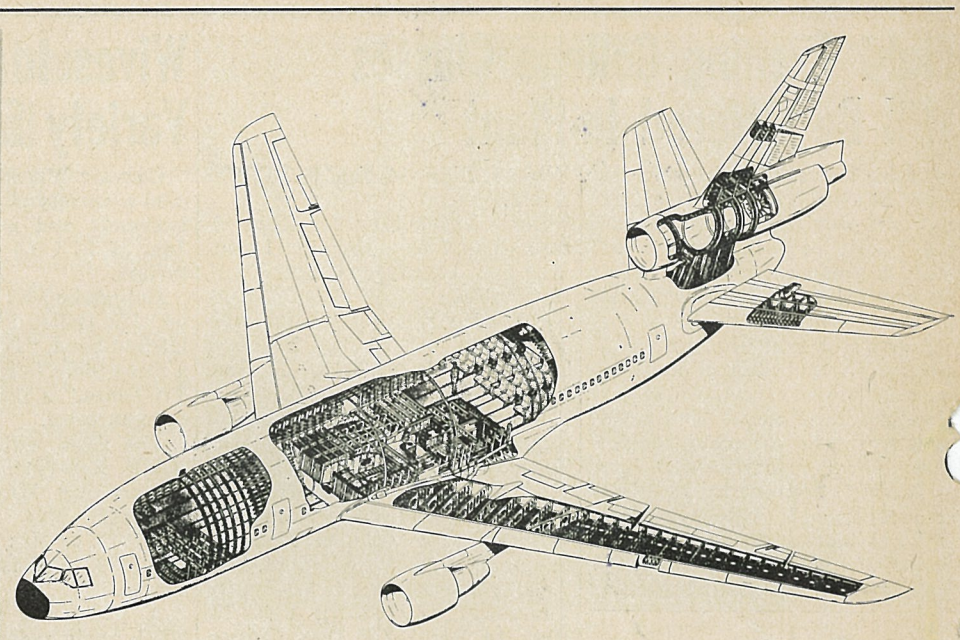
Employes proficient in the Scandinavian languages are asked to phone Keith Blair, library supervisor, ext. 1073 KM. Limited funds are available to compensate for such translations.

The library staff now has a list of employes who can provide translations as needed from French, German, Russian, Italian, Spanish, Hungarian, Dutch, Chinese and Japanese.

GOLFERS TO PLAY OLD BONITA LINKS

Monthly tournament of the CRA Golf Club will be held Jan. 25-26 at old Bonita Golf Course. Starting times will be taken on Jan. 15. Prizes will be awarded flight winners in low net and low gross. Starting times can be obtained by contacting Lindbergh Field, ext. 511.





JUMBO JETLINER—Photo of model and artist's cutaway shows giant DC-10 commercial jetliner for which Convair division is building fuselage sections under contract from McDonnell Douglas Corp. Aircraft will have length of 180 feet and wingspan of 155 feet, 4 inches. Recent orders from Trans International Airline (TIA) of Oakland, Calif., have raised total firm orders and options to 141. DC-10 is expected to enter airline service in 1971.

Big Milling Machine Easily Moved As It Floats on Air Bearings

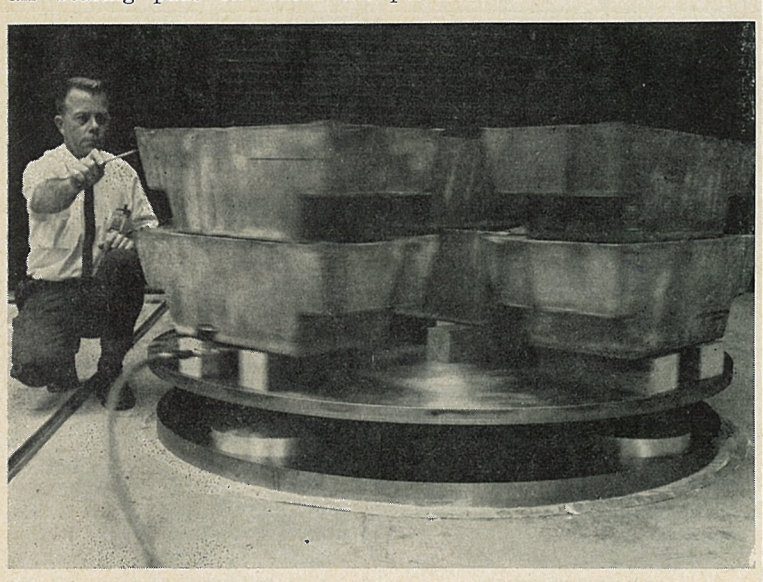
How do you rotate a 5-ton milling machine so you can mill a 40-foot-long piece of metal without interfering with adjacent machines?

At Convair's Lindbergh Field plant it is simple. A machine shop operator plugs in a shop air line and pushes the big machine around with his hand.

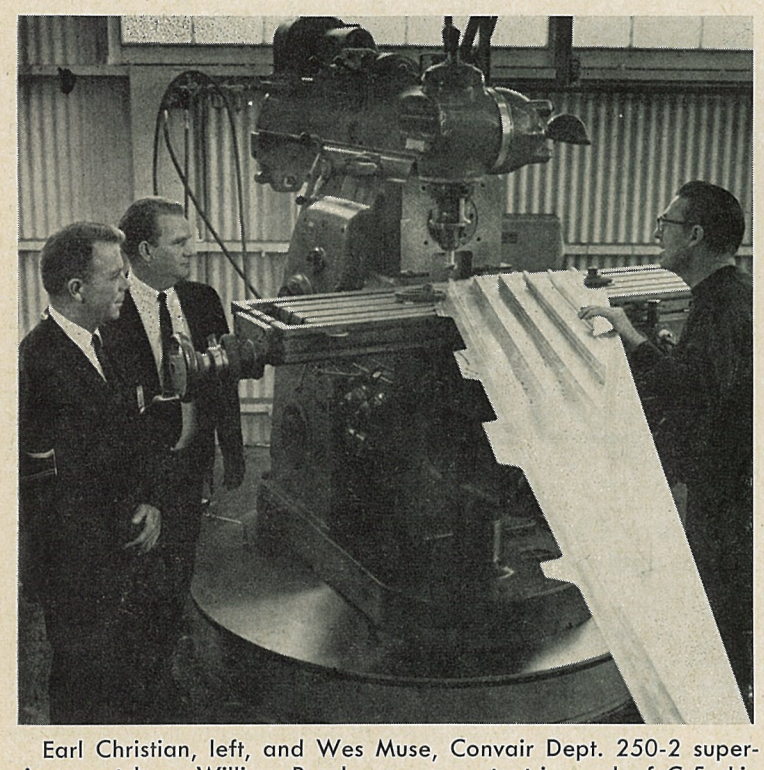
Key to rotating the 11,500-pound Cincinnati three-axis mill is the 70-inch-diameter steel turntable and the four self-aligning air bearing pads on which the machine rests.

When the shop line is connected, air flows through the air bearings and the turntable and milling machine float friction-free on a .001-inch air cushion.

Earl Christian, a Dept. 491-0 manufacturing development engineer, designed and supervised construction and installation of the rotating platform and its 13-inch-diameter air bearings at the request of Wes Muse and R. A. O'Connor, plant engineering supervisors.



AIR ASSIST—New air bearing turntable base for use in rotating milling machine at Convair is tested by Earl Christian, manufacturing engineer. Weights totaling 17,875 pounds were moved without breaking pencil lead.



Earl Christian, left, and Wes Muse, Convair Dept. 250-2 supervisor, watch as William Reader prepares to trim end of C-5 skin panel. Machine is resting on air bearing turntable.

Muse, supervisor of project engineering, and Don Stewart, design group engineer now on loan to Canadair, recommended the air bearing turntable concept after researching other commercially-available approaches and finding them less efficient and more costly.

One of the turntables is now in use in Bldg. 1 at LF and another is being fabricated. Muse said design and construction of the turntables at the Kearny Mesa plant will cost the division about $4,000 less than aircraft turntables.

The turntable base plate, made of 2½-inch steel, weighs 2,575 pounds and the revolving platform, made of 1⅝-inch-thick steel, weighs 1,700 pounds. The two are connected through a conventional center spindle and air is distributed equally to the air bearing pads through lines from a central manifold.

Christian said Scott A. Shepler of Dept. 756-0 at KM did a "fabulous job" of precision machining the air bearing pads for the prototype turntable with John Akers as leadman. Richard Johnson of Dept. 451 handled surface grinding with Glen Criger as leadman.

The turntable parts were assembled and tested at KM before being trucked to Lindbergh Field. Metal blocks weighing 17,875 pounds were placed on the platform in off-balance positions. The bearing system functioned perfectly although the weights were off-balance by more than 1,000 pounds.

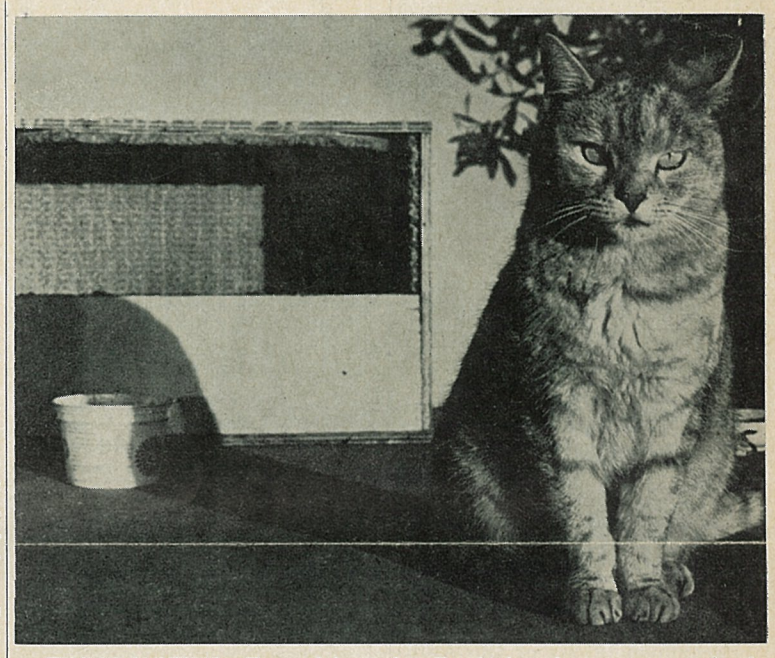
Christian said the air bearings, because of their precision machining, operate on an extremely low flow-rate of shop air and could be operated continuously for more than an hour on a small K-bottle of nitrogen gas.

An aluminum platform will be built around the prototype turntable in Dept. 015 to give the mill operator more "walking room" around the machine.

Milling machines mounted on the turntables will be used to mill 40-foot-long "planks" for C-5 empennages. The "planks" serve as strong, non-riveted skin stiffeners for the empennage structure.

Muse said use of the turntables to rotate the machines will conserve valuable space and save operator time by eliminating interference with work on adjacent machines.

Air bearing systems developed by Dept. 491-0 have been used for many applications, including testing of Orbiting Astronomical Observatory separation, with some supporting up to 300,000 pounds.



FELINE LUXURY—Terry (short for Terrier) enjoys a new abode near Bldg. 1 lobby provided by unknown person or persons. Terry is self-appointed greeter with some 15 years' service in Pomona.

In New Quarters

Pomona Division's Feline Greeter Gets Wall-to-Wall Carpeting

Terry, Pomona division's one-cat welcoming committee at Bldg. 1, recently fell heir to a new abode provided by person or persons unknown.

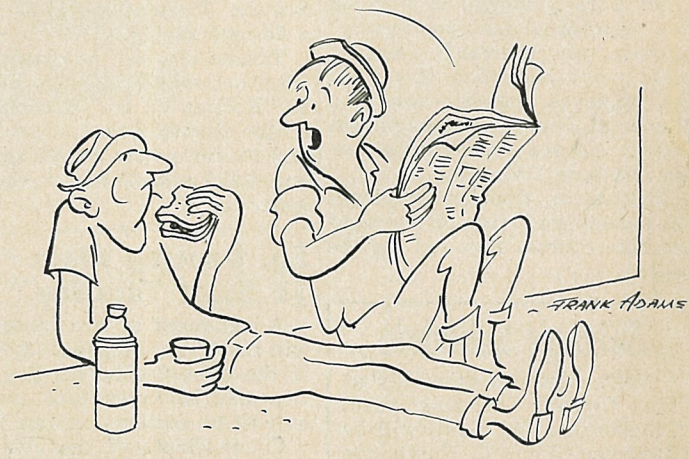
Interior is completely lined with carpeting and Terry (short for Terrier) obviously enjoys the luxury.

Terry is a "people watcher" and for some 15 years has acted as self-appointed greeter at Bldg. 1. She takes her duties seriously and several years ago when employe entrance was changed, she made the transition with cat-like grace—never missing a day.

Each morning the grey cat sits on the step watching approvingly as her friends hurry in to work. Single exception is when Julie Nonemaker of purchasing arrives at 7:40 a.m. Terry dashes to greet Julie and receive breakfast.

"Terry exhibits personal pride in her new home by strutting her approval if anyone is watching," Julie said.

During the day the cat retires to nearby shrubbery, according to Virginia Anderson, receptionist. But she returns about 3 p.m. to bask in the afternoon sun — either within or on top of her new home.



"Th' government reminds me of things at home . . . I'm always tryin' to balance th' budget and my wife is always introducing new bills."

NEWS Editions Will Be Merged Into New Publication Next Month

Effective with the next publication date, June 9, all local editions of General Dynamics NEWS will be merged into one basic newspaper, renamed General Dynamics WORLD.

The WORLD will carry wider coverage of important news from all divisions and subsidiaries but also will provide space for news of purely local interest.

Involved are NEWS editions published at San Diego and Pomona, Calif.; Fort Worth, Texas; Rochester, New York; Quincy, Mass., and Groton, Conn.

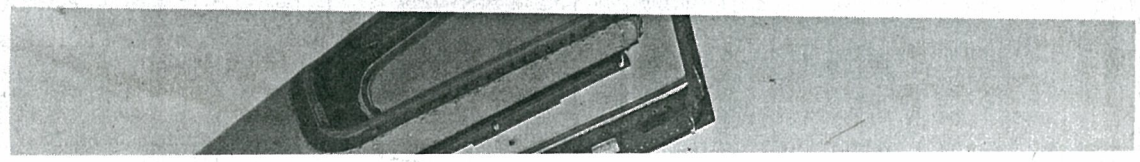
The move is being taken to achieve greater cohesion among divisions and subsidiaries, to expand awareness of Corporate goals and activities and to improve publishing efficiency.

The WORLD will be centrally edited and will appear every other week simultaneously at major locations.

SAN DIEGO EDITION

GENERAL DYNAMICS
NEWS

Vol. 24, No. 11 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 26, 1971

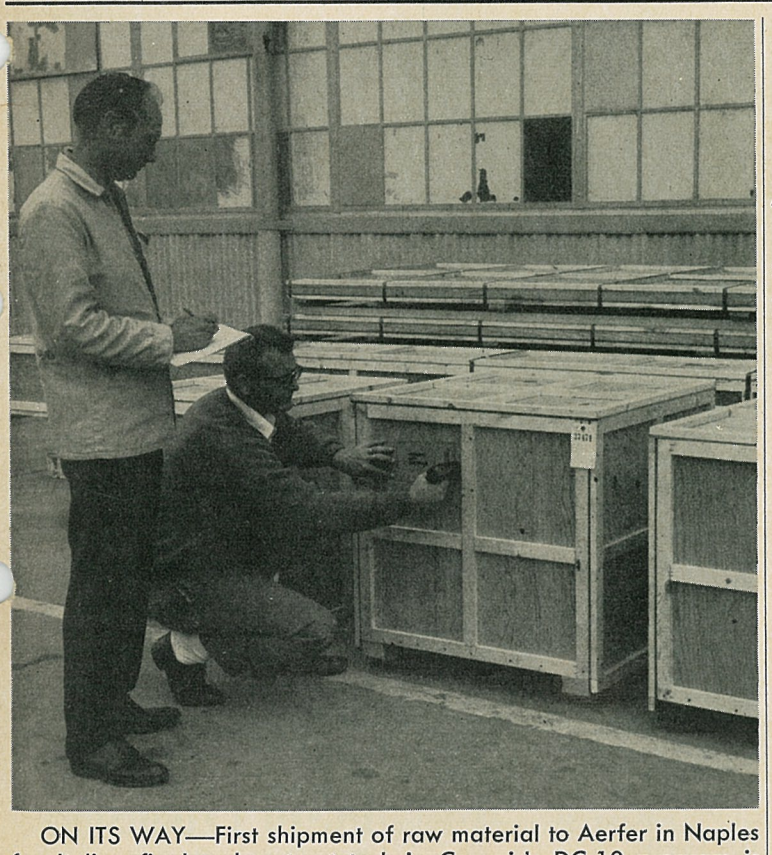


F-102, F-106 Studies To Lengthen 'Life'

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 2 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, January 22, 1969



ON ITS WAY—First shipment of raw material to Aerfer in Naples for Italian firm's subcontract task in Convair's DC-10 program is tagged out by Fred Woods, left, leadman for freight area, and Fred Hadaway, shipping clerk.

DC-10 Tooling Placed For Assembly Line

Tempo of Convair division's multi-million dollar DC-10 fuselage task is stepping up.

Jack Hurt, DC-10 program manager, reported the division expects to have approximately 1,000 on the DC-10 program by the end of January.

Hurt said considerable material is being received, including capital facility items such as a giant numerical control mill, a multi-spindle tracer controlled profiler and other conventional milling and tracer control machines.

Convair is planning to spend approximately $8,250,000 for capital facility items, Hurt said, and he emphasized that the equipment will greatly expand and enhance manufacturing capabilities on the DC-10 program. It also will permit Convair to assume a sound position for future contracts.

The numerical control machine will be installed in Bldg. 5 at Lindbergh Field plant and the other equipment is being installed in Bldg. 1 at LF.

Most dramatic aspect of the program to date is in Bldg. 3, where many of the giant tooling fixtures have been completed and are on assembly line locations.

Meanwhile, the program recently recorded another first with initial shipment of raw material to Aerfer in Naples. Aerfer, under a subcontract from Convair, will fabricate certain skin panel sections of the DC-10 fuselage. When completed, panels will be transported to San Diego by ship.

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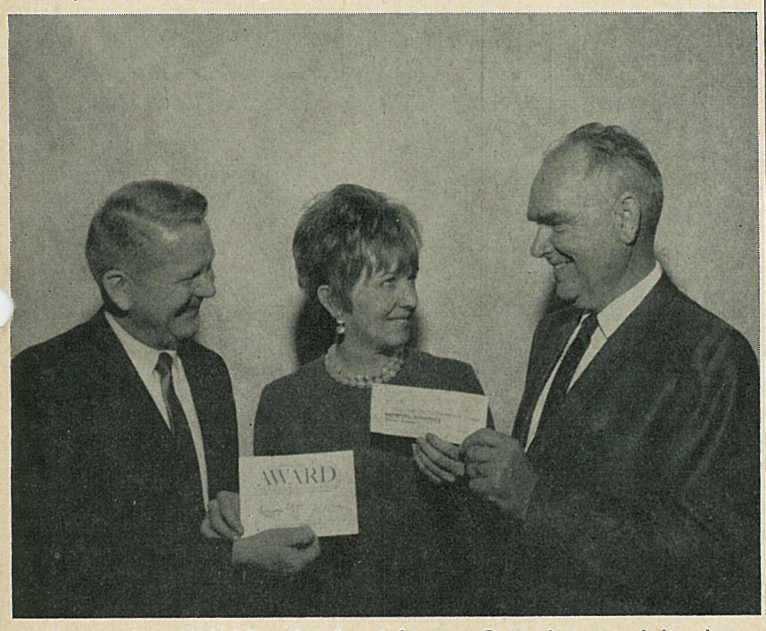
Buying Idea Brings $5,000

Convair division's second maximum-allowance $5,000 Employe Suggestion award in a month was presented recently to Jo St. John, a material release analyst in Dept. 840-0 at Kearny Mesa.

Mrs. St. John's suggestion will result in total-quantity instead of repetitive small-quantity purchase of low-cost parts expected to be used during 1969 in F-111 AGERD components being produced by Convair for Fort Worth division.

The suggestion is expected to

(Continued on Page 2)



MAXIMUM AWARD—Jo St. John, a Convair material release analyst, receives $5,000 Employe Suggestion award check from Lyle Wood, right, material operations manager, and accompanying certificate from Art Ratz, left, Dept. 840 supervisor.

Engineering Design Awards Announced

Establishment of a General Dynamics Design Achievement Award program was announced this week by Roger Lewis, General Dynamics president, as a part of a Corporate-wide effort to highlight engineering excellence in 1969.

Winners will be selected in divisions on the basis of outstanding accomplishment during the year and the winner of the Corporate award will be chosen from the division winners.

Division awards will be $500 honorariums and the Corporate award $1,000.

"Inasmuch as the health of any Corporation is, in large part, dependent upon the quality of the products it produces, it is appropriate that those individuals whose creative ability is embodied in the end product receive special recognition," Edward H. Heinemann, Corporate vice president-engineering and program development, stated.

(See page 3 for Heinemann interview.)

Candidates will be considered in each of the following: Canadair, Convair, Fort Worth, Pomona, Electronics, Electric Boat, Stromberg-Carlson, Datagraphics and Quincy division. Engineering department heads at the various operating units are setting up machinery for nominations and ultimate selection of finalists and winners.

Selection calls for "the most significant contribution to the design of deliverable hardware made during the calendar year" and although this would normally point to a milestone achievement in technology or creativity breakthrough, Heinemann indicated that guidelines are not so strict as to preclude peripheral achievement in a supporting field that contributes to the design objective to outstanding degree.

Division awards will be presented by division or subsidiary general managers and engineering heads. The Corporate award will be presented by Roger Lewis.

The award program will continue indefinitely, Heinemann said.

"We intend to emphasize our total engineering effort not only in 1969 but in all the years to come," Heinemann added, "to give full recognition to the importance of this key part of our organization."

Roger Lewis Calls For Imaginative Approach

(Following is a statement from Roger Lewis, president of General Dynamics Corporation.)

I am pleased to designate 1969 as "Engineering Year" throughout General Dynamics.

Almost everything we do in our aerospace, marine and electronics divisions, and much of what underlies the strength in our resources divisions, rests squarely on engineering. From concept through design, development, production and use, ability is directly related to the quality of our engineering.



ROGER LEWIS

If we are to grow and prosper, the design of our products must be imaginative, useful and economic. The world will beat a path to the better mousetrap.

The Engineering Year program has been designed to direct our attention to the engineer and engineering, to illuminate the importance of creativity and discipline in design and to develop improved standards of performance. While engineering is one of the primary functions of our Company, it is of most immediate importance because it is the first step in the chain and no amount of energy, skillful manufacturing, finance or sales can compensate for less than first quality engineering. General Dynamics' reputation as a bold and imaginative engineering company is well established and in designating 1969 as Engineering Year, I have every expectation that we will, by close attention to all aspects of engineering, by all levels of management, so strengthen this key resource that General Dynamics will continue to grow soundly and develop the strength which will make it possible for us to respond to ever more important and challenging assignments from our customers.

Bowers Says '68 Good Year For Convair, Sets Forth His Objectives For 1969

Winning of a new military aircraft program, providing major improvements for the Air Force's F-106, securing of two new Atlas-Centaur missions and becoming a prime contender for future VSTOL and VTOL aircraft were among major 1969 Convair division objectives announced by Jack L. Bowers, general manager, at meetings for supervisors Jan. 7.

Other objectives for the year, by area, include:

Quality—attain 100 per cent successful delivery, launch and flight performance for Atlas and Centaur vehicles. Win Air Force "Sustained Craftsmanship Performance" award.

Management — meet DC-10 first delivery schedules. Improve safety record by 10 per cent and make it best in the aerospace industry.

Economics—exceed budgeted profit and return on investment. Improve profit by $500,000 through value engineering change proposals.

Future Programs — maintain ability to compete for major space programs.

Bowers also outlined division achievements toward 1968 objectives and said the "profit picture" for the division at year's end was excellent.

Convair's proposal on the Navy's VS(X) anti-submarine warfare aircraft is now undergoing an evaluation by the Naval Air Systems Command which is expected to be completed by the first week in March. Meanwhile, the division has received an additional $1.5 million contract to sustain VS(X) efforts and continue proposal follow-up work.

The general manager called 1969 a "critical year" for decision on proposed F-106 improvements.

Bowers said the division will put about a fourth of its "assignable resources" during 1969 into work on new military and commercial applications for tilt-wing and short-takeoff-and-landing aircraft.

Bowers called 1968 a year of "real solid accomplishment for the future" and said winning of the contract for DC-10 fuselage production has given the division a good sales base for several years from which to work toward future prime programs.

(Continued on Page 2)

'Tiger Team' Off to Cape Kennedy For Review of Atlas-Centaur 19

A 30-man "tiger team" from Convair division's Kearny Mesa plant will be at Cape Kennedy next week for Atlas-Centaur 19 equipment assessment and flight readiness review.

AC-19 late next month will launch the first of two 1969 Mariner spacecraft for Mars flyby. A propellants tanking test for the launch vehicle was run last week, the spacecraft is to be mated Feb. 11 and running of composite readiness tests is scheduled Feb. 18.

W. S. Hicks, AC-19 project engineer, will be chief for the "tiger team" review with J. W. Swigart as Atlas program office representative. B. R. Foushee will be technical chief, C. C. Campbell Jr. will be responsible for equipment assessment and J. F. Serafin will serve as team coordinator.

Other team members and areas of responsibility include M. J.

(Continued on Page 2)

Tiger Team Off to Cape

(Continued from Page 1)

Debreceni and A. L. Vinzant, propulsion; E. R. Kimmy, propellants; C. W. Aulgur and R. T. Fox, pneumatics; J. G. Bodle and J. D. Soltmann, hydraulics; Charles Pruckner and G. C. Krumweide, structures; R. L. Shoff and W. F. Sauer, autopilot; Leroy White and D. G. Huber, propellant utilization.

Also E. H. Luke, guidance; Joe Saugier, range safety command and radio frequency; L. D. Harber, telemetry; Jim Burkhardt, instrumentation; C. L. Cozzens, launch control; R. P. Mikkelson, electrical; J. W. Taylor, J. N. Brown and A. W. Wiest, reliability; E. H. Christensen, thermodynamics; J. K. Azeka, test evaluation, M. L. Bjorstrom, operations.

Richard E. Jumont, assistant chief of the NASA Lewis Research Center resident project office at Kearny Mesa, will accompany the team for the review.

R. S. Menefee, a Rocketdyne representative at Kearny Mesa, also will be present for Atlas engines systems review.

Salvage Schedule

Next employes sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, Feb. 1. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard.



COMMENDATION AWARDS—Col. Charles F. Merz, left, Defense Contract Administration Services plant representative, congratulates Maj. Chester A. Holland, center, and Capt. William E. Lounsbury Jr., after pinning Air Force Commendation Medals to lapels of each.

USAF Commendation Medals Awarded 'Industry' Officers

Maj. Chester A. Holland and Capt. William E. Lounsbury Jr. —both on 10-month assignments with Convair division in the Air Force Institute of Technology "Education with Industry" program — recently were awarded U.S. Air Force commendation medals for distinguished service during previous duty assignments.

Holland received the second Oak Leaf Cluster to the Air Force Commendation medal for meritorious service as deputy staff procurement officer of the Bangkok area procurement office at Don Muang Royal Thai Air Base, Thailand, in 1967-68.

"During this period, Major Holland's outstanding professional skill and initiative aided immeasurably in identifying and solving numerous problems encountered in the accomplishment of his duties," a citation accompanying the award said.

Lounsbury received the Air Force Commendation Medal for meritorious service while assigned as missile combat crew commander of the 509th Strategic Missile Sq., Whiteman AFB, Mo., from Oct. 10, 1963, to July 15, 1968.

"During this period, Captain Lounsbury demonstrated outstanding leadership, supervisory and technical skill in accomplishing all assigned tasks . . .," his citation stated.

Col. Charles F. Merz, Defense Contract Administration Services plant representative, presented both awards Jan. 10 at the DCAS-PRO Commander's Call at Kearny Mesa. Citations for each were read by Lt. Col. Joseph B. Garrison, DCAS deputy plant representative.

Maj. Holland's wife, Helen, and Capt. Lounsbury's wife, Carolyn, were among guests.

Ten-year service pins were awarded to DCAS employes Pauline Harrington, Rachel Jones and John Cianciarulo. A $75 Beneficial Suggestion award and certificate was presented to Carl A. Adolfson for a suggestion which resulted in revision of a Defense Supply Agency form for recording of data.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Jan. 11 and Jan. 31.

Thirty-year: Dept. 053, W. S. Stroud; 145, T. H. Chadwick; 400, R. A. Way.

Twenty-five-year: Dept. 016, A. J. Winner; 059, L. D. Veall; 511, K. W. Andrews; 842, R. T. Andrews; 860, H. C. Leppart; 756, R. T. Bernal.

Twenty-year: Dept. 019, A. R. Barron Jr.; 027, M. R. Brown, C. Prachyl; 031, E. J. McInvale; 058, R. E. Sommers; 130, Guadalupe Ashook; 170, L. D. Boyles; 250, D. H. Eldridge; 300, J. Korchick; 491, M. S. Bock Jr.; 524, Doris H. Bennett; 759, A. W. Crosthwaite; 761, J. B. Jessop; 832, Zola B. Cruger; 850, L. H. Thoulion.

Fifteen-year: Dept. 015, J. L. Hopkins; 058, R. L. Hart; 142, A. S. Spitzer; 149, E. V. Petzen, G. F. Wilson; 202, R. Conshafter; 250, J. C. Daniels, J. T. Taylor Jr., L. M. Timlick; 400, J. F. Skarda, K. A. Waid; 401, B. E. Smith; 420, J. F. Goeb; 514, S. B. Stevens; 532, A. M. Colvin; 588, G. V. Smith; 597, A. D. Mattia; 985, G. H. Berg.

Ten-year: Dept. 002, E. A. Cavender, V. E. Cole; 015, C. W. Dunbar; 016, Angela V. Minor, L. W. Tedford; 059, J. A. Autry; 101, Jean M. Collins, R. F. Mancuso; 130, E. A. Lindem; 141, Willa H. Kirk, B. E. Posey; 149, J. A. George; 170, Mary C. Bagwell, C. L. VanDeusen; 250, J. T. Dragonetti, M. E. Nicolet, R. L. Rouse; 400, G. B. Houvener; 401, A. Cruz Jr.; 452, G. R. Beckner; 515, R. E. Maze; 517, J. G. Kornmayer; 524, Juliett Rosenthal; 526, Jean A. Roy; 531, E. B. Woodward; 551, B. N. Agamata; 567, C. Vreeland; 572, N. F. Melber; 580, K. E. Hogeland; 583, Wilford Herman; 589, D. A. Anderson; 731, C. E. Barrett, C. N. Traunero; 733, T. Duarte, J. Ortiz; 780, W. D. Eddy, J. R. Mitchem; 962, R. E. Harper; 967, A. J. Aylott; 986, Joyce L. Miyashiro.

ELECTRONICS

Ten-year: Dept. 612, B. G. Ward.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Jan. 3.

Dept. 059, T. Austin, $203.40; 840, B. Cano, $88.80; 810, M. M. Evans, $15; 733, E. V. Gloudeman, W. J. Mars, $182.30 each (joint award); 842, M. C. Hight, $313.20 (two awards); 780, J. E. Kelley, $15; 840, D. C. Reed, $15; 143, R. R. Reekers, $20.30; 802, H. A. Waldorf, $15; 780, E. W. Way, $22.90.

Employe Suggestion awards approved for the week ending Jan. 10.

Dept. 027, C. Absher, $19.50; 979, R. F. Austin, $104.70; 507, K. R. Bailey, E. V. Marikle, $25.50 each (joint award); 020, C. Constantino, $49.00; 833, D. A. DeDonato, $15; 113, N. L. Eldridge, $44.50; 979, L. W. Gardenour, $30; 519, C. Greve Jr., $15; 031, G. R. Hill, G. H. Wiggins, $8.60 each (joint award); 027, E. Hofmann, E. Osgood, $27.60 each (joint award); 953, J. W. Kieff, $15; 144, R. J. Kolek, $15; 144, W. J. Kruse, $35.90; 507, R. H. Lewis, $15; 027, M. J. Lynn, $15; 835, A. E. Mack, $51.40; 732, H. E. McEntarffer, $95.60; 401, W. A. McGrew, $34.90; 019, M. T. McNeel, $73; 001, H. G. Mondy, R. L. Shim, $13 each (joint award); 015, J. Perez, $15; 143, R. R. Reekers, $58.70 (three awards); 027, F. J. Serio, $85.50; 015, J. E. Silva, $15; 574, C. Skeen, $17; 575, J. E. Stengel, $15; 985, C. H. Towner, $15; 985, J. F. Wells, $46.

Papers Presented

CONVAIR

ROL—P. K., Dept. 596. "Ion-Molecure Reaction with Merging Beams." American Physical Society Meeting, San Diego, Calif. Dec.

Papers presented at the AIAA/Entry Vehicle Systems and Technology Meeting, Williamsburg, Va., Dec. 3-5.

CARNAHAN — K. R., J. PRUNTY, Dept. 572. "Ablative Thermal Protection Systems for Maneuverable Re-entry Spacecraft."

COWARD—Ken S., Dept. 583. "An Assessment of Variable Geometry Spacecraft Performance Potential."

Papers presented at the Air Force & Aerospace Corp./Gravity Gradient Altitude Control Symp., Los Angeles, Dec. 3-5.

CHIARAPPA—D. J., Dept. 585. "OV1 Spacecraft Gravity Gradient Systems (Vertistat)."

WIANT — H. R., Dept. 572. "Wire Screen Booms for Gravity Gradient and Antenna Applications."

WRENCH—E. H., Dept. 596. "Vertistat H, A Gravity Gradient Configurations Proposed for High Pointing Accuracy at Synchronous Altitudes."

Papers presented at the IEEE & Assoc. for Computing Machinery/Second Conference on Applications of Simulation, New York, Dec. 2-3.

GREEN—C. J., Dept. 170. "Modeling a Weather Environment."

HOOLEY—J. L., Dept. 170. "Iterative Computer Simulations as an Aid to Systems, Design and Cost Effectiveness Analyses."

Rider-Driver

CONVAIR

RIDE WANTED—Santee-Carlton Hills to Kearny Mesa plant, 3:30 p.m. to midnight, phone Ron Reekers, ext. 3218 KM, days, or (home) 448-4360.

RIDE WANTED—From vicinity Fletcher Parkway and Dallas Street to Kearny Mesa plant, 8 a.m. to 4:45 p.m. shift; phone Ione James, ext. 3815 KM or (home) 469-8816.

RIDE WANTED—From Lake Murray area to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Mae Conner, ext. 1571 or (home) 460-6007.

Personals

CONVAIR

We wish to thank our Convair friends for their kind expressions of sympathy during the recent loss of our beloved mother and father, Mildred and Clarence Strand. Your kind thoughts and wishes will always be remembered.

Richard D. Strand, Dept. 836-1
Sally Sherwin, Dept. 059-4

Deaths

CONVAIR

AKERS—James F., Dept. 48 retiree, died Jan. 13. Survived by his wife Lena.

BAKER—Paul I., Dept. 831-0, died Jan. 7; survivors include mother, Mrs. E. K. Law, and a brother, Lyle W. Baker.

REYNOLDS—Jenevieve M., Dept. 142-1, died Jan. 1; survivors include husband, Vincent.

ELECTRONICS

HELGESON—John W., Dept. 388, died Dec. 21, 1968. Survived by his wife Patricia.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Buying Idea Brings $5,000

(Continued from Page 1)

eliminate need for 5,832 individual purchase authorizations and related activity and will save the division more than $108,000 during the year.

Mrs. St. John, a Convair employe since 1963, received the $5,000 award in a surprise ceremony late last month during her last work day before start of a week's vacation. She said she planned to purchase a new bedroom suite and invest the remainder.

The small semi-conductor and mechanical devices being procured for future use as a result of the suggestion were identified from an F-111 AGE item project report.

Authorization for the quantity procurement prior to receipt of individual release and need schedules was approved by A. L. Deane, chief of material program control, J. S. Berggren, program manager for F-111 aerospace ground equipment, and J. L. Richman, chief of material control.

Bowers Calls '68 a Good Year, Sets His Objectives For '69

(Continued from Page 1)

"It has given us a tie to a new airplane which will be a quality product and one which will probably become the standard mode of aircraft model choice in the future," he said.

Bowers said the division must work to "redevelop momentum" in the Atlas and Centaur programs.

"We are now faced with a period of several years when the Atlas and Centaur will be built at smaller rates . . . This is also a time when successful flight performance will be most important."

Bowers noted that plans are firmly established for Atlas-Centaur launches for Mariner-Mars missions in 1971 and said NASA has chosen Centaur for use with Titan boosters for 1973 Mariners.

Atlas-Centaur began 1968 with completion of the successful Surveyor program and ended the year with the successful Orbiting Astronomical Observatory launch. Nineteen of the 21 Atlas launches during the year were successful. Number of consecutive successful SLV-3 launches was extended to 43.

During 1968, the division more than exceeded its 20 per cent quality improvement goal, as measured by the division's Craftsmanship program, with defects being reduced to 14.9 per 1,000 manhours. The division also won the Air Force Systems Command's "Craftsmanship" award, which was scheduled for presentation this month.

In the area of safety, Bowers said the division did an outstanding job of reducing severity—but not of frequency — of accidents and will probably rank third nationally in the aerospace industry.

The Convair Integrated Management System (CIMS) is being used on most programs and meets newly established Department of Defense requirements.

Bowers said Convair in its Management Upgrade program completed a coaching series and sent a number of individuals to special management seminars and courses. New communication channels were developed, including the "Q and A" program in which about 10 per cent of 700 questions received resulted in some change in division policy or working conditions.

Bowers said the division exceeded budgeted profit for the year significantly but achieved only about 25 per cent of the Conservation Program goal of reducing expenses by $1 million in selected indirect-budget categories. Perishable tool, maintenance and telephone expenses were over budget.

The objective to exceed production sales forecast by 10 per cent during the year was achieved primarily due to F-111 support work received from Fort Worth division.

No new proprietary program was adopted by a customer but Bowers said significant advances were made, particularly in development work on a "Triamese" three-element vehicle concept that may have future use in the area of recoverable launch vehicles.

"On many of our objectives, we went over the top; some were marginal, and several were disappointing," Bowers commented. "They balanced out to good overall performance."

Eight In-Plant Courses Slated

Eight San Diego Evening College courses providing credit toward the "Certificate in Supervision" will be given at Convair's Lindbergh Field and Kearny Mesa plants beginning the week of Feb. 10.

Those at Lindbergh Field will meet in Bldg. 14 and those at Kearny Mesa in Bldg. 17.

Following is a list of the courses with meeting times for each:

Lindbergh Field

Introduction to Supervision, 4 to 7 p.m. Wednesdays.

Basic Psychology for Supervisors, 4 to 7 p.m. Mondays.

Advanced Industrial Economics, section 1, 4 to 7 p.m. Mondays; section 2, 4 to 7 p.m. Thursdays.

Production Planning, 4 to 7 p.m. Tuesdays.

Kearny Mesa

Personnel Administration for Supervisors, 4:30 to 7:30 p.m. Tuesdays.

Effective Writing for Supervisors. 4:30 to 7:30 p.m. Mondays.

Human Relations, 4:30 to 7:30 p.m. Wednesdays.

Phone educational services, ext. 1931 KM or ext. 491 LF, for additional information.

Group Insurance Premiums Deductible

Convair employes itemizing medical deductions in 1968 income tax returns may deduct dependent insurance premiums for the period during which it was paid.

Hourly employes with dependent coverage paid $2.33 weekly Jan. 1 through Dec. 22. Salaried employes paid $2.01 weekly Jan. 1 through Sept. 1 and $1.34 weekly Sept. 2 through Dec. 22.

Employes also may deduct disability insurance paid to the State of California as a tax. This was 1 per cent of the first $7,400 in earnings or a maximum of $74.

DC-10 Expansion Causes Shifts

Requirements for Convair division's expanding DC-10 program have prompted extensive rearrangements and consolidations of various departments and operations at both Kearny Mesa and Lindbergh Field plants.

A major move was consolidation of launch vehicle and reliability department functions at Kearny Mesa to create space for engineering tech publications from Lindbergh Field.

Another was relocation of Electronics division operations at LF because of activation of DC-10 engineering and support operations.

Electronics operations have been moved from the third floor of Bldg. 51 at LF to the ground and second floors of Bldg. 51 and into leased trailers in the experimental yard at Lindbergh Field.

The DC-10 program's engineering and support operations now occupy most of the third floor of Bldg. 51. Engineering tech publications, now at Kearny Mesa, also had occupied space on the third floor of Bldg. 51.

Meanwhile, DC-10 tool planning and design departments are being relocated from the mezzanine of Bldg. 1 at LF to the first and second floors of Bldg. 8 at LF. This move is designed to provide proper environment conducive to design. It also will provide for expansion of tool manufacturing in Bldg. 7 at LF.

DC-10 Tooling Set in Place

(Continued from Page 1)

Convair's responsibility is the manufacture of all the 179-foot fuselage except the nose and tail assemblies. Panels to be made by Aerfer include the top section of the fuselage and right and left side panels, including window and door cutouts.

Initial shipment of material to Aerfer, according to Roland Le Beau, traffic representative, consisted of nine crates weighing approximately 8,000 lbs. and containing three types of materials —flat sheet stock, coil stock and angle material.

Le Beau said additional shipments will be made when requested by the Italian firm.

First cut for fabricated parts at the Lindbergh Field plant is expected early in February, according to Eddie Robinson, general foreman of the DC-10 project.

Heinemann Explains 'Engineering Year'

(In connection with establishment of 1969 as "Engineering Year," within General Dynamics, GD/NEWS asked Edward H. Heinemann, Corporate vice president-engineering and program development, to elaborate on the philosophy behind the program.)

Question: First, why 1969?

Answer: Because it is here and the beginning of a New Year is the best time to reassess one's position and objectives for the future.

Q—Why the emphasis on engineering?

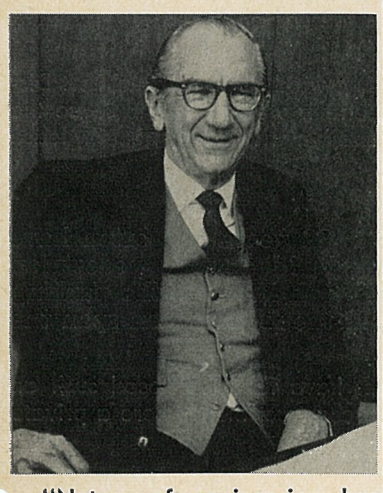
A—Because engineering still is the first link in the chain of events climaxed by production of an article for sale and delivery to the customer. Quality and performance of a product are directly related to the quality of the engineering that went into it originally. If a bad engineering job was done and overruns are substantial, it most certainly follows that the downstream functions such as planning, purchasing, fabrication, assembly etc. also will overrun. History clearly reflects that where engineering was done correctly and imaginatively the first time, a sound, low cost and reliable product was the result. In other words, value engineering is an initial design consideration, rather than something to be applied to bad design.

Q—How many people in General Dynamics are we talking about?

A—As a large, fast-growing systems engineering business, General Dynamics employs approximately 20,000 engineering people, meaning that one out of every five GD employes is either an engineer by profession or in an engineering department.

Q—Are all 20,000 engineering employes graduate engineers?

A—No. About 51 per cent have engineering degrees, while others have degrees in related fields or have completed college work.



"Nature of engineering has changed . . ."

Technicians, specialists in many fields, draftsmen, secretarial and clerical personnel are all part of the engineering team. Incidentally, it is impossible to draw a hard fast line as to what is engineering and what is not. There are many peripheral, supporting efforts that are essential to engineering and in one sense or another almost all of us play an engineering role.

Q—Just how do you define "engineering"?

A—It has many meanings. Personally, I think one of Webster's latest definitions comes closest to the mark. This reads: "A science by which the properties of matter and the source of energy in nature are made useful to man." This gives due regard to the necessity for the modern engineer to be thoroughly familiar with all the new materials, methods and practices that advancing science and technology reveal, and to use this knowledge in designing the systems and machines to serve society.

The design engineer is perhaps our most important, though support is vital from many other scientific and engineering specialists, metallurgists, aerodynamicists, mathematicians—the list is endless.



QUIZZED—Edward H. Heinemann, Corporate vice president-engineering and program development, explains philosophy behind emphasis upon engineering.

Q—In which divisions are most engineers employed?

A—Percentagewise, General Dynamics' engineering strength is distributed rather uniformly among these nine major operating activities:

Canadair, a subsidiary—Montreal, Quebec.

Convair division — San Diego, Calif.

Fort Worth division—Fort Worth, Texas.

Pomona division—Pomona, Calif.

Stromberg Datagraphics, a subsidiary—San Diego, Calif.

Electronics division—Rochester, N. Y.

Stromberg-Carlson, a subsidiary—Rochester, N. Y.

Electric Boat division—Groton, Conn.

Quincy division—Quincy, Mass.

Q—What future trends do you see in engineering emphasis?

A—The nature of engineering has changed to a significant extent during the last few years. This has been caused by larger programs which require multi-division effort, and also by changes in the Department of Defense systems procurement methodology. This has called for a greater concentration of effort and a great deal of re-education of engineers in having to consider the total impact of a new operational system. The component design engineer also has been forced to approach engineering problems with new technology.

It could be said that the last two years were indeed "systems engineering years." During 1967 and 1968 General Dynamics participated in at least a half dozen major contract definition proposals: the FDL (Fast Deployment Logistics) Ship; LHA (Landing Helicopter Assault) Ship; DX (Destroyer Experimental) Ship; FX (Fighter Experimental) Airplane for the U.S. Air Force; VFX (Fighter Experimental) for the U.S. Navy; VS(X) (Anti-Submarine Experimental) Airplane for the U.S. Navy. These programs alone have entailed more than 1,000 man years of engineering effort, much of which was expended on a multi-division basis.

Q—Will the systems engineering approach continue?

A—Yes. I believe we now have rounded a corner in the systems engineering approach and it has become an established way of life. We now must work toward a better understanding by both military and industry and development of ways to make the approach more effective so as to consume fewer manhours and dollars. I believe this can be done; the same results with less effort.

Q—How difficult has it been to integrate engineers from various divisions into a systems group?

A—There have been problems. It is not easy to upset an engineer's home life for periods of six months to a year during which he is assigned to work in a different part of the country. I must say, however, that the response has been excellent, in part because many of our ambitious individuals recognized the experience as an opportunity to broaden their knowledge and professional exposure. There is, of course, expense involved in transportation and per diem, but the advantage of continuity in using our own employes, rather than hiring outsiders (who must first learn the Corporation) more than compensates.

Q—Do you have any plans in mind for improved coordination among engineering departments in different divisions?

A—One of the first rules in running any operation is to establish objectives and to recognize problems—then to organize for the most effective solutions. We already have started to tie division engineering departments together for greater Corporate strength by increasing the dissemination of technical know-how and by continually working on improved ways of managing our efforts. Unification and standardization of engineering departmental procedures and practices is beginning to pay off. This should result in multi-million dollar annual savings, to engineering functions as well as manufacturing and other departments.

Q—What do you expect the Corporation to gain from the new Engineering Design Achievement Awards program?

A—Another important rule of management is to give credit where it is due. The new awards program is merely one added way of giving this recognition.

Q—The first awards will be for accomplishment in 1969. Will the awards continue in subsequent years?

A—Certainly. The need to recognize excellence continues always and I predict that the responsibilities of engineers will continue to increase. As with every profession, technology is subject to obsolescence. We must strive to make engineering and progress synonymous.

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'Anything Is Possible' As Discoveries Mount

(Following is a message from Dr. Eric A. Walker, president of the Pennsylvania State University and a director of General Dynamics, in connection with "Engineering Year.")

As man has progressed through the centuries from the stone age to the bronze, the machine, and the scientific ages, discoveries have come at a rapidly increasing rate, and it is now apparent that almost anything is possible in the way of new developments.



SALUTE—Dr. Eric A. Walker, educator and General Dynamics director, endorses "Engineering Year."

The scientific discoveries of recent years have exceeded our most profound thoughts and predictions.

At this time, and for the foreseeable future, it appears that the engineer, in the current use of the word, will be called upon to play one of the most important roles in the development of mankind. It is he who will have to translate the advances and progress of science into usable applications.

His role is becoming increasingly more difficult as he tries to apply all the advancements of metallurgy, chemistry, mathematics—to mention just a few—into designs that are useful, effective, and that can be produced within the means of the consumer. No longer is the engineer's progress paced only by scientific knowledge, but rather by his own ingenuity to produce a usable, saleable product.

To recognize the importance of engineering, the National Academy of Engineering was established in December, 1964 as a sister organization to the National Academy of Sciences. I had the pleasure of being a founding member of the organization and its second and current president. I am very pleased to see the progress it has made and the kind of members it has attracted and the recognition given to the importance of sound engineering and to the advancement of civilization.

It is especially heartening to see how many of these members started out as design engineers and have worked their way up to the presidency or vice-presidency of their organizations.

This is truly an engineering world we live in, and I heartily salute the engineers of General Dynamics and the 1969 Engineering Year.

ERIC A. WALKER

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Dr. Walker's Distinguished Career Spans Three Decades in Education

Dr. Eric Arthur Walker, president of the Pennsylvania State University, joined the board of directors of General Dynamics in April, 1967.

Born in Long Eaton, England, April 29, 1910, Dr. Walker came to the United States in 1923. He received a BS from Harvard University in 1932, and a master's degree in business administration and ScD. from the same university in 1933 and 1935 respectively.

Dr. Walker joined the faculty of Tufts College in Medford, Mass., in 1933 as an instructor in mathematics. He became, successively, assistant professor, associate professor and department head of the college's electrical engineering department before joining the University of Connecticut in 1940 as head of its electrical engineering department.

In 1942 he was called to Harvard as associate director of its Underwater Sound Laboratory. In 1945 he joined the Pennsylvania State University as head of its electrical engineering department and director of its Ordnance Research Laboratory.

Dr. Walker was named dean of the College of Engineering and Architecture at Pennsylvania State in 1951 and became president in 1956.

In 1948 he was awarded a Presidential Certificate of Merit for his work during World War II on development of guided torpedoes.

Dr. Walker presently is a member and former chairman of the National Research Council's Committee on Undersea Warfare, a trustee of the Institute for Defense Analyses and president of the National Academy of Engineering, among others.

Aircraft Pioneer

Engineering Vp a Veteran Designer

Edward H. Heinemann, General Dynamics vice president-engineering and program develoment, got an early start in the aircraft business. He joined Douglas Aircraft Co. in 1926 as a draftsman at age 18 and his rise was rapid. Three years later he was chief engineer of the Moreland Aircraft Co. and five years after that, having returned to Douglas, he was chief engineer for Douglas-El Segundo.

Young Heinemann soon sought out practical aircraft experience as well as theoretical. Of his $18 starting salary he devoted $5 to flying lessons and when business at the airfield was slack he made parachute jumps to attract attention—and maybe customers.

As his experience broadened Heinemann's professional reputation grew. Known primarily as an overall design engineer, his designs were distinguished by simplicity and light weight, factors which often were instrumental in winning competitions.

As chief engineer of Douglas, he supervised and was responsible for design and development of the following aircraft:

SBD Dauntless, dive bomber; R3D-1 (DC-5), transport; DB-7 Boston, attack bomber; A-20 Havoc, attack bomber; A-24, attack bomber; A-26 Invader, attack bomber; XCG-7 and XCG-8, gliders; DR2D Destroyer, dive bomber; AD Skyraider, attack bomber TB2D, torpedo bomber; D-558 Skystreak, research jet; D-558-2 Skyrocket, rocket research aircraft (first plane to reach twice the speed of sound); F3D Skynight, jet night fighter; A2D Skyshark, turboprop attack bomber; A3D Skywarrior, heavy attack jet bomber; F4D-1 Skyray, jet interceptor; F5D-1 Skylancer; A4D Skyhawk, light attack jet bomber; Piaggio-Douglas jet, preliminary design.

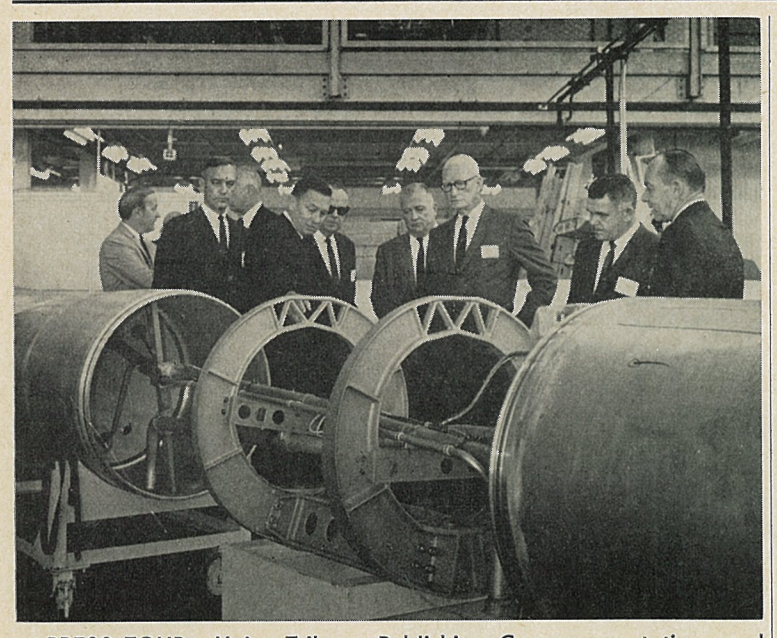
A registered mechanical engineer, Heinemann is a fellow of the Royal Aeronautical Society, American Institute of Aeronautics and Astronautics and American Astronautical Society, and of the Society of Aeronautical Weight Engineers and is a member of many professional societies.

In 1952 Heinemann was awarded the Sylvanus Albert Reed Award; the Collier Trophy in 1953; the Southern California Aviation Man of the Year Award in 1954; and in 1964 he presented the 53rd Wilbur Wright Memorial Lecture before the Royal Aeronautical Society.

Research Engineer Appointed Editor

Robert R. Brazell, senior research engineer in Convair's life sicences Dept. 592-0, has been appointed editor of the national Survival and Flight Equipment Association (SAFE) Journal.

Brazell has served as executive adviser for the organization for the past year and was national president in 1967 and secretary-treasurer in 1965.



PRESS TOUR—Union-Tribune Publishing Co. representatives and Convair division hosts looking over F-111 fuel tank assembly at Air Force Plant 19. From left, Gene Gregston, Ray Blair, Jim Adamson, Frank Macomber, John Pinkerman, Eugene Williams, Mil Chipp and Bill Van Horn.

Evening College Registration Jan. 27-31 For Spring Session

Convair division employes seeking to upgrade skills can avail themselves of a wide variety of spring semester courses under the San Diego Community Colleges Evening Program.

Of particular significance for Convair employes are the technical and trade extension courses, many of which will be taught by Convair personnel.

Most classes will start the second week in February and will be held either at City Campus, 1425 Russ Blvd., or Mesa Campus, 7250 Artillery Dr.

Registration should be made from Jan. 27 to Jan. 31 by appointment. Mesa registrations will be taken from 4:30 p.m. to 8:30 p.m. in Room A109 on campus. At City Campus, registrations will be accepted at the same hours in the gymnasium There will be a $1.50 registration fee.

Industrial technology courses being offered at Mesa include industrial blueprint reading (advanced), optical tooling, inspectional instruments and measurements, manufacturing processes and basic industrial materials.

In addition, a number of industrial automation courses will be available at Snyder Continuation, 1372 12th Ave. Courses will offer numerical control (advanced) and programming techniques (advanced). Registration at Snyder will continue until Feb. 7.

Electricity and electronics and related technical math and calculus will be available at both colleges.

Registration forms and additional information can be obtained by contacting Wayne Turner in educational services at Lindbergh Field, ext. 491.

Former Test Pilot To Speak Jan. 29

B. J. Long, a former Convair test pilot now with North American-Rockwell, will be guest speaker at the AIAA's regular monthly dinner meeting Wednesday night, Jan. 29, at the Atlantis Restaurant.

Long, who is assistant to the vice president of marketing, space division, will speak on the Apollo program, including mission plans for Apollo 9. Movies and slides will be shown.

Dinner will be served at 7 p.m. Reservations can be made by contacting Pat Fair at 296-6681 (ext. 1115).

Blueprint Reading Course Is Offered

A course in Basic Blueprint Reading will be offered for Convair division employes from 4 to 6 p.m. Tuesdays and Thursdays at the Kearny Mesa plant beginning Feb. 11. E. E. Chavez of Dept. 143-1 will instruct.

The adult ungraded (no college credit) course will be sponsored by San Diego Evening College. Phone educational services, ext. 1931 KM, for additional information or registration.

Students Given Tour Of Towing Basin

Twenty-five junior high school students, all members of the Elementary Institute of Science sponsored by San Diego City Schools, visited the General Dynamics Marine Technology Center on San Diego Bay recently and toured the towing basin. Parents of several accompanied the group.



HELPING HAND—Convair division's Virginia Roshee, left, and Mary Stevens, Dept. 016 electric bench employes, inspect Christmas contributions of food, clothing, toys and money which were collected at Lindbergh Field plant for needy families in Mexico. Display was set up in Bldg. 2. Combined efforts of Bldg. 2 departments 016, 045, 401-5, 049 and 149 assured success of the project.

Cal Western Prof Will Address Club

Dr. Maneck S. Wadia, professor of anthropology and administration, Cal Western University, will address the Electronics-SD Management Club tonight.

Topic of the meeting at the Kings Inn Cardinal Room will be "Management and the Behavorial Sciences." In addition, the National Management Association's Excellent Club Award will be presented to the Electronics-SD group.

Social is at 5:30 p.m. and dinner at 6:30. Tickets at $3.95 include baked ham dinner and are available from Management Club boosters.

Walter Wissinger's Son Is Decorated

Capt. Allen R. Wissinger, son of Walter J. Wissinger of Convair's Dept. 250-1, has been awarded the Silver Star for gallantry in action during a battle in Viet Nam Oct. 1.

Capt. Wissinger "distinguished himself by heroic actions" when his unit came under intense enemy attack, his citation said.

"Capt. Wissinger . . . spotted a hostile position that was causing a large number of . . . casualties," the citation said. "With complete disregard for his own safety, (he) exposed himself to intense enemy fire . . . and singlehandedly destroyed the enemy emplacement."

A career Army officer, the captain is now serving his second tour in Viet Nam.

Daughters Assist 200th Anniversary

A Convair wife and Convair twin daughters are serving as hostesses for San Diego's 200th Anniversary, Inc., celebration.

They are Pamela and Penny Boteler and Marlyne Kowalczyk. Pamela and Penny are the 21-year-old twin daughters of Earl W. Boteler, VS(X) program manager. Marlyne is the wife of Richard Kowalczyk, an engineering systems specialist.

Duties of the hostesses call for appearances at various functions throughout the year, such as fiestas, parades, sporting and civic events and greeting dignitaries.

Requests For Tuition Refunds Due Soon

Convair division employes desiring tuition refund for spring semester college-level courses have been asked to submit requests (form A346) to educational services, mail zone 130-30, immediately.

The tuition refund request forms must be signed by the employe's supervisor to certify courses being taken are of benefit to the employe and to the division.

Jack Croft, chief of educational services, said only requests received within three weeks after the start of classes can be approved.

Fellowship Group Slates Meetings

The Upper Room, a Christian fellowship, plans regular meetings in the engineering auditorium, Bldg. 5, Lindbergh Field, beginning Feb. 6.

Movies will be shown each Thursday through May 1 at 11 a.m., 11:30 a.m. and noon.

Lunches will be allowed in the auditorium.

Clarence Strand Fatally Injured

Clarence S. Strand, 51, a Convair employe since 1940, and his wife, Mildred, 46, suffered fatal injuries in a two-car crash Dec. 31 near Tallahassee, Fla.

Strand was general foreman in the experimental department at Lindbergh Field. He and his wife were enroute to Bradenton, Fla., to visit his parents.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—One Sunday while I was working at Lindbergh Field an emergency occurred at home and my wife dialed CY6-6611 and mysteriously and automatically was switched to the art department (which was working overtime). I know that plant guards can be helpful in such cases, but my wife called the only number she knew. Couldn't Convair provide a recorded message when the switchboard is closed, stating "If this call is an emergency, dial etc." and give the plant security number.

A—Night listed telephone numbers are published in the Convair phone directory as well as Pacific Telephone's San Diego directory. Both list plant security, 296-4589, and other emergency numbers. It is the responsibility of the employe to keep his family advised how he can be reached. It is mechanically impossible to provide a recording should the daytime number be called when the switchboard is closed.

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Q—Why was paging by public address system discontinued at Lindbergh Field?

A—Paging, which was distracting for many people, was ended because there now is telephone service in all areas formerly reached by the paging system. Personnel, regardless of titles, when leaving their office or area should notify clerks or secretaries where they are going so they can be reached in emergencies.

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Q—Recently I was told that hourly employes are not allowed to start vacations on any day other than Monday, except in rare circumstances, and then both supervision and industrial relations must approve. Yet I understand salaried employes can and often do start vacations in midweek.

A—Industrial relations does not require approval when, through necessity, an hourly employe requests vacation to start other than at the beginning of a week. The policy, which applies both to hourly and salaried, is "vacation will start at the beginning of a work week unless otherwise approved by the department head."

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Q—I own a small aircraft and often fly it to work. Why can't I get a tie-down spot along runway 31 on the Convair side of Lindbergh Field or at Compass Rose? Most people I've asked seem to think I'm nutty, but Ryan has such a service for its employes who fly to work.

A—The area outside our fence is owned by the United Port District. To provide tie-down space Convair would have to lease the location and in view of the limited number who would benefit, lease costs would not be justified.

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Q—I have been with Convair 32 years and often have wondered why Convair doesn't build a small pedestrian overpass from Bldg. 5 at Lindbergh Field to the parking lots above the railroad tracks. If the freeway can span the railroad, why can't we?

A—Railroad officials in the past have firmly opposed such an overpass. The state has authority to construct them where a private corporation does not.

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Q—When the first Savings and Stock Investment Plan distribution is made in February to those who were members from the start, and requested it, will the taxable portion be considered as 1968 or 1969 income?

A—1969.

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Q—I'm new at Convair. Does the company ever have "family days" at such places as Disneyland or Sea World? What about family park/recreation facilities?

A—Convair itself doesn't sponsor "family days" although a plant open house is being considered for next year. The Management Club sponsors a family trip to Disneyland as well as a variety of family activities, including Padres Night. As for recreational facilities, you must have missed the word during employe indoctrination. Few companies are so well endowed. They include a park near the Kearny Mesa plant, tennis courts, clubhouses, picnic area, miniature train, etc., and Pine Crest, a mountain retreat in the Cuyamacas. Contact Convair Recreation Association (KM ext. 1111).

George Miyashiro Installed as Prexy Of Convair Toastmasters Club

George Miyashiro was installed as president of Convair Toastmasters Club 3745 at a Jan. 9 dinner meeting in the Valley Ho restaurant.

Other new officers are Murray Franke, educational vice president; Ray Behlman, administrative vice president; Robert Frederick, treasurer; Floyd Glick, secretary, and William Alexander and Dwain Rice, sergeants-at-arms.

Cy Campbell, a Toastmasters International director, was installing officer. Jess Cook received the "outstanding Toastmaster" trophy and Harvey Seibert the "most improved speaker" trophy. Joe McCafferty, outgoing president, was presented a lapel pin in recognition of his service.

Club meetings are held at 4:30 p.m. Wednesdays in the CRA Clubhouse. Guests and prospective members are invited.

Two-Hour Variety Show Slated For Jan. 25 at CRA Clubhouse

All General Dynamics employes families and friends have been invited to the Convair Wives Club-sponsored variety show at 8 p.m. Saturday (Jan. 25) in CRA Clubhouse at Kearny Mesa.

About 50 entertainers will participate in the two-hour show.

Included will be the 32-piece "Galley Slaves" kitchen band from East San Diego Christian Church; "The Outward Cry," a folk group that includes Pat McBride, daughter of W. L. McBride of Convair's Dept. 761-0; and the "Tri-Tones" trio.

Steve Wetherbee will present a magic show; Gary Kendrick, a ventriloquist act, and Bill Keller of Convair's Dept. 015-0, a vaudeville routine with his own ukulele accompaniment **(GD/NEWS, June 5, 1968).**

Refreshments will be served and there will be no admission charge. For reservations, phone Mrs. L. H. Allen, 583-2868, Mrs. L. F. Klepach, 264-1013, or Mrs. Arnold Ramberg, 277-7603.

* * *

Convair Wives have scheduled their annual card and game party for 10 a.m. to 3 p.m. Feb. 5 in CRA Clubhouse. Bridge, canasta and parlor games will be played and a light lunch will be served. Cost is $1.25.

All employe wives and friends are invited. For tickets, phone Mrs. Frank Weismantel, 582-9291, Mrs. Dave Johnston, 277-2308, or Mrs. Ramberg, 277-7603.

Members of the club will have lunch aboard the Star of India at 12:45 Feb. 14. A bus trip to Palm Springs is scheduled March 4.

50-Mile San Pasqual Bike Tour Planned

CRA cyclists will pedal 50 miles on a San Pasqual tour Saturday (Jan. 25), leaving from Pomerado Road and U. S. Highway 395 at 7:30 a.m. The ride will take the group through Ramona, Clevenger Canyon, San Pasqual, Highland Valley and past Lake Hodges.

For additional information, phone Dick Gilbert, ride leader, ext. 1267 LF or (home) 223-8848.

Twenty-five mile rides are scheduled at 9 a.m. the second Saturday and 50-mile rides at 7:30 a.m. the fourth Saturday each month.

Other upcoming rides and leaders are: Feb. 8, El Monte, John Gacho; Feb. 22, Oceanside, John Burnett; March 8, Mission Bay, Myke Dickey; March 22, San Diego Bay, Cy Campbell; April 12, La Jolla, Dave Lukens; April 26, Brown Field, Agostino Arcidiacono; May 10, Frontier Town, Bob Bardoll; May 24, Lakeside, Campbell; June 14, Lake Jennings, Gacho; June 28, Lake Hodges, Russ Kennedy.

Novice Dance Class Slated

A new beginner's ballroom dancing class will be sponsored by CRA, starting Monday night, Feb. 3, in CRA Clubhouse auditorium.

Commissioner Royce Riggan said classes will be held every Monday night thereafter for 12 weeks, starting at 7:30 p.m. Price for the 12 lessons will be $18 per couple.

Basic instruction in seven dances will be given by professional dance instructor Bob McGlade. These will cover fox trot, waltz, swing, rhumba, tango, samba and cha-cha.

Additional information can be obtained by contacting Riggan at 420-3775 or at Lindbergh Field (ext. 2001).

Ping Pong Tourney Slated For February

Table tennis, anyone?

Six new ping pong tables, recently purchased by CRA, will be set up Saturdays through Feb. 8 in the CRA Clubhouse auditorium at Kearny Mesa for open play.

A tournament is scheduled beginning Feb. 15 with all interested employes and family members invited to participate. Winners will receive trophies.

Facilities For Training Unskilled Inspected During Tour of Plant

Convair division's programs and facilities for training and hiring of unskilled and unemployed were reviewed recently by Algie A. Hendrix, Corporate vice president.

Convair officials acquainted Hendrix with division activities directed at giving opportunities in a wide variety of classifications in aircraft assembly areas.

Jack Croft, chief of educational services, presided at the presentation. Speakers were Roy Richardson, labor relations representative, and training class instructors Jack Kennedy, Herb Banks and Jimmy Wilkins.

Instructors covered each of the division's four types of schools—Vestibule, in which new hires learn skills they will be using while at Convair; Mayor's Committee for Jobs, National Alliance of Businessmen JOBS program for training of hard-core unemployed, and Project Transition, in which servicemen are prepared for job placement after completing military obligations.

Accompanying Hendrix on his tour of training class facilities in Bldg. 3 of Air Force Plant 19 were M. V. Wisdom, industrial relations director; Bill Van Horn, director of operations; Eugene Fox, manager of personnel; Paul Veal, chief of industrial relations, Lindbergh Field.



TOUR—Algie A. Hendrix, right, Corporate vice president, stops to chat with trainee Lamance Burks during tour of Convair division's training program facilities for unskilled and unemployed. Bill Van Horn, left, director of operations, and others accompanied Hendrix on tour.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Jan. 28. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Beginner's course starts Feb. 3, 7:30 p.m.

BASKETBALL — Second shift slow break league forming. Call Pete Beyrer, ext. 1111 KM.

BICYCLE CLUB — San Pasqual ride, Jan. 25. Meet 7:30 a.m., Pomerado Road and U.S. Highway 395.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS — Meet each Tuesday and Thursday, 7-10 p.m.

CHESS — Play Wednesdays, 7 p.m.

CHORUS — Rehearsals 7:30 p.m., Mondays.

COINEERS — Now meet second Monday each month, CRA Clubhouse. Next meeting Feb. 10, 8 p.m.

FENCING — Workouts and instruction Friday, 7:30-10 p.m.; YWCA, 10th and C Sts.

GARDEN CLUB—Meeting Feb. 5, 7:30 p.m. in Floral Bldg., Balboa Park.

HEALTH CLUB — Open 9:30 a.m. to 10 p.m. Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

ICE SKATING—GD family skate nights Thursday, 6:15 to 7:45 p.m. Mission Valley Ice Arena.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAIROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Next shoot Jan. 26, 9:15 a.m., S.D. Police Pistol Range.

RADIO CLUB—Meeting Feb. 6, 7:30 p.m.

RIFLE CLUB — Senior shoot today, Jan. 22, 7:30 p.m. Juniors shoot Feb. 1, 1 p.m., Gillespie Field Range.

SCULPTURE—Workshop sessions each Monday, 7-10 p.m.

SKI CLUB—Meet Feb. 4, 8 p.m., Catamaran Hotel, Mission Blvd.

SQUARE DANCE CLUB—Dance 8-10 p.m., each Thursday.

TRAILERS—Meeting Feb. 4, 7:30 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

WOMEN'S GOLF — Next tournament Feb. 8, Mission Bay Golf Course, 9 a.m.

Bargain Tickets

Tickets are available at all CRA and employe services outlets for several upcoming sports, show and film attractions. Included are:

Andy Williams' San Diego Open golf tournament, Jan. 28-Feb. 2, Torrey Pines Country Club, season tickets $15 (a $7 saving).

Andy Williams Show, 8 p.m. Jan. 28, San Diego Civic Theatre, tickets $5, benefit for Salk Institute for Biological Studies.

"The Homecoming," 8:30 p.m. Jan. 30, Circle Arts Theatre, tickets $2 (a $1.50 saving).

Rockets vs. Milwaukee basketball, 8 p.m. Feb. 1, San Diego Sports Arena, tickets $3 (a $1 saving).

Gulls vs. Vancouver ice hockey, 7 p.m. Feb. 9, San Diego Sports Arena, tickets $2.75 (a 75-cent saving).

"Funny Girl," 8 p.m. showing Feb. 9, Capri Theatre, tickets $2.40 (a 60-cent saving). Film stars Barbara Streisand and Omar Shariff.

Industrial Recreation Council swim night, 7 to 9 p.m. Feb. 15, Mission Beach plunge, tickets five cents each.

CRA Europe Tour Will Be Discussed

Details for a CRA sponsored European tour will be discussed at a meeting at 7:30 p.m., Feb. 5 in CRA Clubhouse.

A tour group will leave May 17 for the 22-day excursion. Cost will be $389 per person.

Travel films will be shown, refreshments will be served and door prizes, including a free trip to Mexico, will be awarded at the Feb. 5 meeting.

Runners Compete In Bay Marathon

Two CRA runners competed in the Mission Bay Marathon sponsored by the San Diego Track and Field Association on Jan. 11.

Wayne Groesbeck completed the grueling 26-mile 385-yard course in 3 hours 49 minutes 12 seconds and Lane Cowgill in 3 hours 56 minutes 55 seconds.

Thirteen members of the CRA Bicycle Club assisted with traffic control.



WOMEN RUNNERS—Discussing plans for women's group-jogging program at CRA Health Club with Jo Ann Sladavic, instructor, left, are, left to right, Mickey Zagami, Jan White, Rosie Sleigh, Gloria Erickson. Program is open to women employes, wives, and daughters over 12.

New Jogging Program For Women Proposed

More women employes and wives and daughters of employes are being sought for a new group jogging program for women being organized by the CRA Health Club.

Interested individuals may phone Jo Ann Sladavic, a new women's instructor at the club, ext. 1111 KM, for information.

About 30 women and girls recently have been running regularly from the Health Club to improve their physical fitness or for weight control. Ralph Mansfield, club director, said a total of about 80 women use the club facilities, including gym equipment and sauna.

Miss Sladavic, 20, a physical education major at Mesa College, is available to assist with women's physical fitness from 4 to 10 p.m. weekdays and 9:30 a.m. to 5 p.m. on alternate Saturdays. Before joining the Health Club staff recently, she was a physical fitness instructor at La Jolla School of Classical Ballet.

The Health Club's other women's instructor, Joanne Schneider, provides instruction from 9:30 a.m. to 1:30 p.m. Mondays through Thursdays, 9:30 a.m. to 12:30 p.m. Fridays and on alternate Saturdays.

Health Club facilities are open to women only from 9:30 to 11 a.m. Mondays through Fridays—and to all members from 11 a.m. to 10 p.m. Mondays through Thursdays, 11 a.m. to 9 p.m. Fridays and 10 a.m. to 5 p.m. Saturdays.

Miss Sladavic said a majority of the current women runners are wives of employes.

Mrs. Gloria Erickson, a key punch operator in Dept. 101-6, has interested five other women in her department in running. She runs ½-mile four or five days a week. Her husband, Harold, Dept. 059-5, runs 2 to 5 miles three or four times a week.

Jan White, 14, a student at Einstein Junior High, has been running for physical conditioning for a year because her father, Richard, a Convair employe, and a brother, Dick, 17, also run and work-out at the club.

Mrs. Rosie Sleigh, a San Dieguito High School teacher and wife of Kenneth Sleigh of Convair's Dept. 584-0, runs weekdays at the club and weekends at the beach. She's down from a size 22 to size 16 dress!

Mrs. Mickey Zagami, wife of Charles Zagami, Dept. 756-0, jogs a mile and uses the health club gym facilities each morning. "It makes me feel a lot better," she comments.

Special membership for runners, covering showers and locker use, are $10 per year and $6 for six months.

Regular memberships are $18 for individuals and $27 for families for a year; $12 for individuals and $18 for families for six months.

Saunas are available for both men and women and individual instruction is provided on request for weight lifting, reducing, general physical conditioning and running programs.

Locker leases are available on a waiting-list-basis at $6 per year. Guests of employes are charged $1 per visit or 50 cents for sauna use only.

O'Brien, Sutton, Black Share Pistol Honors

Don O'Brien, Dick Sutton and Harry Black took honors in recent Convair Pistol Club competition.

O'Brien topped masters with a 290-9x. Sutton led the expert class with a 278-6x and Black prevailed in the .22 caliber short national event with a 286. Black also was second in masters with a 287-6x and Bill Dittman was runner-up in expert class with a 272-2x.

Trailing Black in short national firing were O'Brien (282), Roland Schneider (273) and Jim Halfacre (269).

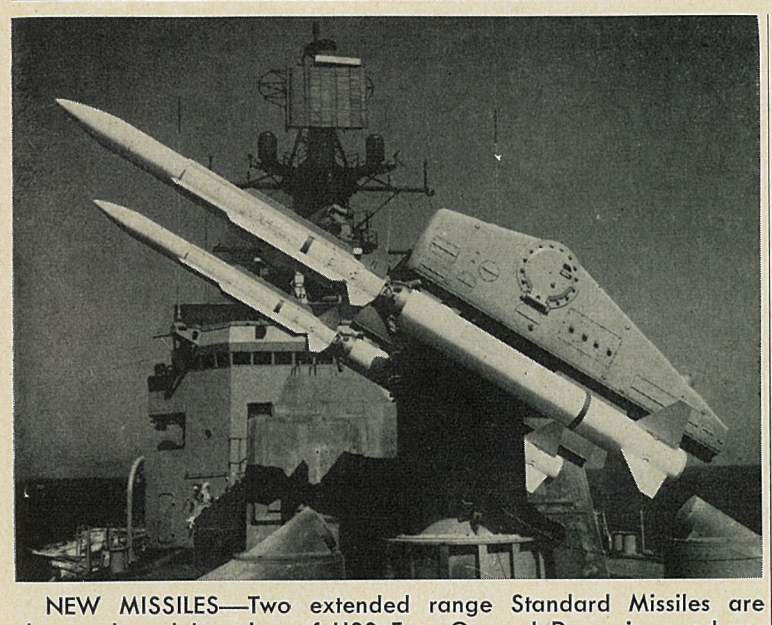
Comprising Convair's quarterly team for outside competition are O'Brien, Schneider, Halfacre and Warren Walker. Next shoot is Sunday, Jan. 26.

Nadine Pryor Wins Golf With Net 74

Nadine Pryor fired a gross 98 and a net 74 to take trophy honors in the General Dynamics Women's Golf Club's regular monthly tournament at Chula Vista Municipal.

May Dean Schell was second and Eileen Wilson third. Next tourney will be held Saturday, Feb. 8, at Mission Bay Golf Course, starting at 9 a.m.

Additional information can be obtained by contacting Freda Magargal (ext. 2933) at Kearny Mesa or Doris Parker (ext. 583) at Lindbergh Field.



NEW MISSILES—Two extended range Standard Missiles are shown aboard launcher of USS Fox. General Dynamics produces both medium and extended range versions of U.S. Navy's newest guided missile.



INSIDE ARCTIC CIRCLE—General Dynamics' research and work submarine STAR III churns through Baffin Bay off Thule, Greenland, where she conducted underwater survey in support of recent U. S.-Danish scientific study. STAR III is now operating in North Sea for offshore petroleum industry.

General Dynamics Aids European Space Study

General Dynamics has participated in another significant space venture with successful launching by the European Space Research Organization (ESRO) of an unmanned satellite to study solar radiation.

The 238-pound satellite was launched Dec. 5 by a three-stage Thor Delta rocket from Cape Kennedy.

The spacecraft was developed by ESRO's European Space Technology Center at Noordwijk, Holland. One of the principal subcontractors was Etudes Techniques et Constructions Aerospatiales (ETCA), incorporated in 1963 under a joint venture between General Dynamics and Ateliers de Constructions Electriques of Charleroi, Belgium.

Officials of the 10-nation ESRO team, which built and launched the satellite, hailed the successful venture as a big step in a cooperative effort to give Europe a modest place in space along with the United States and the Soviet Union.

The drum-shaped spacecraft, called HEOS for "highly eccentric orbit satellite," is to investigate interplanetary space during the period of maximum solar activity.

Instrumentation carried by the satellite will measure magnetic fields, cosmic radiation and solar wind outside of the magnetosphere and the earth's shock wave.

HEOS carries eight experiments prepared by labs in Belgium, France, Italy, Great Britain and West Germany. Expected lifetime of the satellite is one year.

The Europeans paid approximately $16 million to NASA for the rocket and launch costs.

Pilots Amazed at F-111's Blind Flying And Uncanny Bombing Accuracy

The F-111A's bombing accuracy is roughly four times greater than any other Air Force fighter-bombers, and its "effective cost" is about one-third of any other fighter-bombers in combat.

These views were expressed by combat veterans at Nellis AFB, Nev., in the Jan. 13, 1969 issue of U. S. News and World Report. The pilots flew 55 combat missions over North Viet Nam.

"To a man," the article stated, "the pilots profess amazement at the ability of the plane . . . to fly 'blind,' and its 'uncanny' accuracy in bombing missions."

According to the article, pilots praised the F-111A's avionics—its new model radar, revolutionary navigation equipment, and high-speed computers.

"These 'black boxes' permit much of the flight to be programmed before the plane leaves the ground," the article said. "The pilot can pre-set the location of all his targets, as well as the altitude he wants to fly.

"Shortly after takeoff, the complex electronic systems would guide the plane to a series of targets, automatically taking the aircraft up over any mountains along the way.

"As far as 30 miles from the target area, a clear picture of the target would show on the bombing radar. Cross-haired sights pinpointing the target would be plainly visible, the information having been fed into the plane's computer before takeoff. Minor adjustments on the radar target sometimes were made by the co-pilot for additional accuracy, all without seeing the target.

"Approaching the target, the pilot would fly as low as 200 feet above the ground, using terrain-following radar to guide the plane over humps and down into dips.

"At the touch of a button, the computer would take over and drop the bombs at the right instant to compensate for wind, speed and altitude.

"This technique of flying at night and using a 'low profile' . . . permitted the F-111A to fly into areas heavily defended by anti-aircraft guns and missiles, without being picked up by either sight or radar. The planes repeatedly dropped bombs and left before anti-aircraft defenses could react."

Crewmen were also said to be lavish in their praise of the F-111A's escape module, which has been used successfully five times, and the aircraft's safety record as compared to other Air Force planes.

The article continued:

"When calculated by the complex formulas of bombing planners, the proponents here say, the 'effective cost' of the F-111 was found to be about one-third that of any other fighter-bomber in combat. Here's why:

"To guarantee the destruction of such targets as vital bridges, up to 48 F-105s were dispatched to do the job in North Viet Nam. But because of its all-weather and round-the-clock capabilities, plus its high accuracy, only one F-111 was needed for a similar mission.

"In addition, the F-105s would have to be refueled in the air by about four tankers, from their bases in Thailand. And one or two electronic-countermeasures aircraft would precede the mission to confuse the enemy's ground radar. Neither procedure was needed by the single F-111, with its longer range and ground-hugging ability.

"Also, from four to eight F-4 jet fighters would normally accompany the bomb-laden F-105s to ward off the threat of attack by MIG fighters. None were needed to guard the F-111.

"This difference in the number of required planes per target in Viet Nam, the pilots say, makes the F-111 relatively cheap to use in combat. They estimate that the present force of F-105s, A-7s and F-4s in Viet Nam is four times as costly as the number of F-111s that would be needed to replace it—despite the higher initial cost of the F-111."

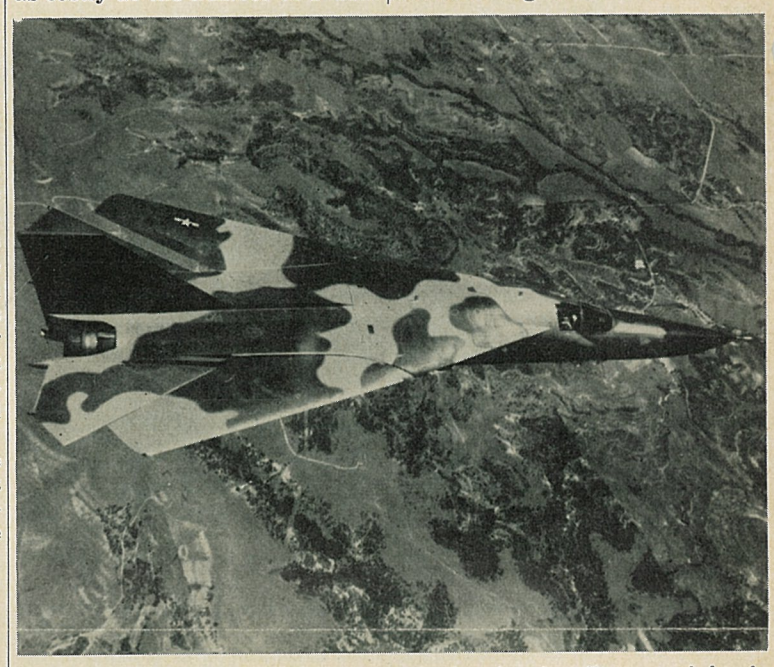
The magazine quoted officers as saying the F-111A would be even more effective in Europe.

"The F-111's low-level, supersonic bombing runs, for one thing could be used to better advantage against the advanced radar defenses and more effective interceptor force in Europe.

"The swing-wing plane's longer range . . . would permit F-111s based as far away as Britain to fly deep into Russia, bomb, and return without refueling.

"And the all-weather capability of the new aircraft is said to be particularly valuable for Europe, where present fighter-bombers can be used only 20 per cent of the time owing to darkness or bad flying weather in daytime.

"For emergency strength, at Allied bases in Europe, reinforcements would be ferried from the U. S. in a hurry, without need for refueling in the air."



HIGH-PERFORMER—F-111As made low-level strikes at night, in bad weather and with extreme accuracy during combat missions in North Viet Nam, according to pilots who flew the aircraft.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

M. KENT TRINDEL (1966) from Corporate Headquarters to contract administrator, Stromberg-Carlson, Rochester. **THEODORE L. McPHERSON** (1952) from Pomona division to Electric Boat as comptroller; **ERNEST F. SMITH** (1959) from Electronics, San Diego to Convair as senior electronics engineer; **DONALD E. KIDDER** (1963) from Electric Boat to Corporate Headquarters as director of European operations; **JOHN FRANKLIN TWEED** (1952) from Electronics, San Diego to Stromberg Datagraphics as senior electronics engineer; **ALLEN BENNETT COX** (1956) from Convair to deputy program director, Pomona; **JOHN M. SIMMONS** (1955) from Convair to senior electronics engineer, Pomona; **JOHN H. GETZ** (1954) from Electronics, San Diego to Convair as senior design engineer.



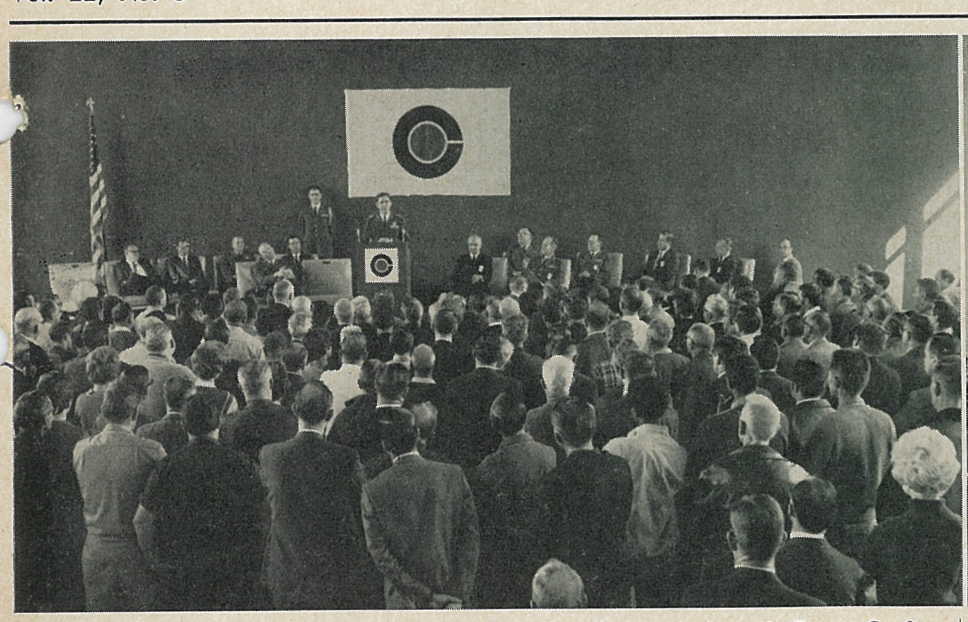


HOLIDAY GATHERING—A yearly General Dynamics custom, Christmas party was held Dec. 24 for members of Corporate Headquarters staffs, gathered on 32nd floor of General Dynamics building, One Rockefeller Plaza, New York City. Algie A. Hendrix, vice president, welcomed group and Roger Lewis, GD president, spoke. Program included carols, led by John Guarnieri with Richard Biernacki as pianist. Refreshments followed.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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AWARD PROGRAM—In photo at left, audience listens during Air Force Craftsmanship Award presentation ceremony, while at right award banner is raised for first time. From left, Lt. Gen. J. W. O'Neill, commander Air Force Space and Missile Systems Organization; Jack L. Bowers, Convair general manager; Brig. Gen. Arthur E. Exon, commander, Defense Contract Administration Services Region-Los Angeles; Col. Charles F. Merz, DCAS plant representative at Convair. Security guards raising banner are W. L. Crow, left, and C. H. Saunders. Audience at presentation included representatives from all plant locations.

$31 Million Reported In Cost Reductions

Employe Suggestions and cost reduction and value control projects by employes saved Convair division about $31 million last year.

About 6,000 ESs were submitted, of which 1,640 were approved, meriting $120,748 in award payments. Two individuals received maximum $5,000 awards.

Employes submitting suggestions that are approved and implemented receive 10 per cent of the first year's saving to the division up to the $5,000 maximum.

Charles L. Baker Jr., cost reduction and value control administrator, said the division will save an estimated $30,869,400 from cost reduction and value control efforts, including $1,175,778 from Employe Suggestions, approved during 1968.



VISUAL PROOF—Displaying Air Force Craftsmanship Award following presentation to Convair division are, from left, Jack L. Bowers, Convair general manager; L. I. "Russ" Medlock, director of reliability control, Lt. Gen. J. W. O'Neill, Air Force Space and Missile Systems Organization commander.

Top Craftsmanship Award Presented

Convair division last week received the U. S. Air Force Craftsmanship Award, highest recognition given by the Air Force Systems Command in its Zero Defects program.

Lt. Gen. J. W. O'Neill, commander of the Air Force Space and Missile Systems Organization (SAMSO), presented the award and an accompanying citation and banner in ceremonies attended by Air Force, NASA and Defense Contract Administration Services officials and about 400 employes representing all Convair departments and plant locations.

Convair was the first General Dynamics division and the first industrial firm in the San Diego area to win the coveted award. Only 21 other Air Force contractors in the nation have achieved such honor.

The award to Convair was "in recognition of sustained superior performance through individual craftsmanship reflecting outstanding achievements, increased efficiency and economy" covering the period from May, 1967, through April, 1968. It was signed by Gen. James Ferguson, commander, Air Force Systems Command.

Jack L. Bowers, Convair general manager, accepted for the division. L. I. Medlock, director of reliability control, represented the division's more than 13,600 employes in accepting the citation. An award banner was raised in ceremonies in front of the Kearny Mesa plant.

Gen. O'Neill said Convair's record for the award period "has given impressive proof of your craftsmanship on the job—yours and that of the many people of your organization who are unable to be here this morning."

The SAMSO commander noted that Convair departments worked

(Continued on Page 2)

SAMSO, Convair VE Reps. Confer

Plans for increased value engineering efforts in 1969 involving Air Force Space and Missile Systems Organization (SAMSO) and Convair division were discussed by 20 SAMSO Defense Contract Administration Services (DCAS) and Convair representatives at a recent conference last week.

Attending were Col. George W. Scott, chief of technical requirements and standards for SAMSO, Col. Hugh Wynne, Atlas program director, Col. Charles F. Merz, DCAS plant representative, and members of their staffs.

Col. Scott, who has overall responsibility for VE activity at SAMSO and with its industry

(Continued on Page 4)

Engineering Council Banquet To Highlight National Week

General Dynamics members of 11 San Diego engineering society and institute chapters will attend a combined banquet highlighting the local observance of National Engineers' Week at 7:30 p.m. Feb. 21 in the Atlantis restaurant.

Included will be members of national and state society and institute chapters of industrial, plant, civil, mechanical, safety, tool and manufacturing, professional, electrical and electronic, traffic and structural engineers.

The banquet will be sponsored by the San Diego Engineering Council. Tickets can be obtained from representatives of each of the chapters or by calling W. L. Timm, Convair AIIE representative, ext. 1464 or 2433 LF.

Counselors for high schools and junior colleges throughout the county will attend a Careers Day panel discussion and dinner, also sponsored by the Engineering Council, Feb. 19 at the Town and Country Hotel. Each of the engineering societies will provide printed materials for future use by the counselors.

Eric Herz of Convair's Dept. 554-0 is assistant chairman of the local National Engineers' Week committee.

Charles Harper and Harry Lund, both of Convair, are members of the Engineering Council board.

Engineers' Week badges are being sold for $1 each by the engineering societies to underwrite the cost of the Careers Day banquet and related Engineering Council-sponsored educational activities.

The theme for this year's National Engineers' Week, inscribed on the badges, is "Engineering—Partner in Rebuilding Urban America."

Fair Share Award Won

A "Fair Share Honor Award" for Convair division employes from the United Crusade of San Diego County was presented to the Convair Employes Con-Trib-Club committee at its Jan. 23 meeting.

Donald L. Morgan, crusade campaign director, presented the award plaque, commended the division on its 90 per cent employe participation in Con-Trib-Club, and expressed appreciation for a 13 per cent increase reflected in the Con-Trib-Club pledge to the United Crusade this year.

The Con-Trib committee pledged $340,000 to the United Cru-

(Continued on Page 2)



EMPLOYES' HONOR—United Crusade "Fair Share Honor Award" for Convair division employes is received by Paul Allgire, left, Con-Trib-Club committee chairman, and Robert Richards, center, United Welders of America representative on Con-Trib committee, from D. L. Morgan, campaign director.

Head of Consultant Company Will Address Mgt. Club Feb. 19

Melvin J. Slater, founder and president of an Indiana behavioral consultant firm and an instructor for several industrial management schools, will be guest speaker at a Convair Management Club meeting Feb. 19 in the Mission Bay Room of the Bahia Hotel.

His presentation, titled "Thoughts of Gold," will provide an interesting insight into thinking as the key to individual development and on how attainment of desires and goals depends on cultivation of the mind.

Slater was educated at Purdue and Notre Dame universities and has spent 20 years as a student and evaluator of mental and emotional disturbances and behavorial patterns.

He has served as a staff consultant for several industrial and educational organizations and is a member of the National Staff Council for Mental Health.

The Management Club meeting will be sponsored by the operations department. Social hour will be at 5:30 p.m. with top sirloin steak dinner at 6:30.

Tickets are $4 for members and wives and $5.25 for non-members and are available through club boosters.





DOUBLE TAKE—Because members of Convair engineering data processing and evaluation, Dept. 574-0, are located both at Kearny Mesa and Lindbergh Field, it called for two ceremonies when they won Craftsmanship Achievement banner. At left was scene at LF when F. D. Applegate, left, director of product design, handed award to C. K. Anderson, manager. At right, ceremony is staged at KM. Department was commended on work toward wide range of goals.

Log Book Entries

Awards
CONVAIR

Employe Suggestion awards approved for the week ending Jan. 17.

Dept. 020, V. H. Ammons, $30 (two awards); 574, A. Aron, $15; 250, G. C. Bagwell, $15; 143, F. A. Baugh, $45.20; 979, H. C. Beers, $15; 250, D. E. Belchamber, M. E. Nicolet, W. G. White, $58.73 each (joint award); 963, B. J. Campbell, $290.20; 401, F. F. Campbell, B. J. Jeffries, $7.50 each (joint award); 454, A. A. Carlson, $15; 454, A. A. Carlson, R. J. Phillips, $7.50 each (joint award); 143, E. T. Clarkson, $223.20; 831, V. C. Cobb, $15; 579, L. E. Ditler, $45.30; 401, C. H. Fenstermacher, $279.37; 401, J. L. Flora, $15; 780, G. D. Gentry, $430; 401, D. J. Harms, $15.

Dept. 756, C. Harrington, H. Prince, $25.75 each (joint award); 143, M. M. Henry, $35; 834, R. L. Holcomb, $115.50; 045, I. D. Howarter, $15; 146, R. B. Kalanquin, $189.90; 300, A. M. Lintvedt, $279.37; 144, E. McLeod, $18.10; 780, T. W. Myers, $15; 250, H. E. O'Neil, $21; 731, E. Ostrow, $49.50; 985, J. C. Pfeil, $15; 141, R. K. Pierce, $39.20; 020, W. H. Ratliff, $120.50; 401, J. E. Schimka, $15; 001, C. E. Schultz, $97.40; 250, R. A. Schultz, $15; 574, C. Skeen, $57.30; 574, W. J. Stark Jr., $15; 250, J. T. Taylor, $105; 149, S. Witkoff, $15.

Employe Suggestion awards approved for the week ending Jan. 27.

Dept. 015, D. L. Akehurst, $15; 019, A. Arguello, $25.80; 143, A. C. Bailor, $15; 027 L. Castro, $15; 015, A. T. DeCasas, $163.30; 401, C. A. Detty, $142.20; 015, D. Dudbridge, P. Weibrecht, $7.50 each (joint award); 524, J. M. Edwards, S. L. Lakes, $42.55 each (joint award); 015, J. B. Hinojos, $28.60 (two awards); 027, E. L. Holtwick, $45.20; 979, L. W. Irminger, $22.50; 780, J. S. Knutson, $15; 015, A. L. Leland, $15; 015, M. E. Long, $25 (two awards); 144, T. J. Marcella, $15; 401, J. F. McConnell, $39.70; 835, K. L. McDonald, $25; 001, H. G. Mondy, $144.70; 015, C. E. Napier, $15; 027, R. Petrosky, $45.50; 130, P. F. Puckett, $15; 985, R. G. Tucker, $19.30; 142, G. M. Reynolds, $58.90; 015, N. L. Valentino, $41.20; 049, R. Williams, $15.

Lost & Found

LOST—Jade earring set in gold with cultured pearl in center, lost Jan. 22 in or near Bldg. 1 at KM; reward. Phone Ethel Stanley, ext. 3411 KM.

Personals
CONVAIR

I wish to thank my many Convair friends for the lovely flowers, cards and kind expressions of sympathy during my recent stay in the hospital.
Mike Korandovitch, Dept. 460-0

* * *

Thank you for your kind expression of sympathy and for the beautiful flowers sent for memorial services for Omer H. Roderick (retired 1961).
Jessie M. Roderick

* * *

We wish to express our appreciation and thanks to our many friends at Convair for their cards, flowers and memorial gifts at the recent loss of our father.
Paul and Carl Bieberdorf

* * *

I wish to thank our Convair friends and the Con-Trib-Club for the assistance received during Christmas that made the holidays a hapy one for my family, especially the children. Your thoughts and good wishes during my hospitalization were gratifying.
Howard F. Grant, Jr., Dept. 460

Deaths
CONVAIR

BURBAGE—Callie D. (retired Sept. 2, 1968), died Jan. 2; survivors include husband, Hamilton Burbage.

HOGGE—Leonard W. (retired Feb. 3, 1964), died Nov. 20; survivors include wife, Mary Edna.

WOLFE—Leroy (retired Feb. 28, 1957), died Jan. 13; survivors include wife, Alice.

Invention Disclosures
CONVAIR

BAKICH—G., Dept. 541, J. J. MONTY, N. E. NAISH, Dept. 756. Positive Stop and Adjustment Mechanism.

BANK—G. A., Dept. 507. Self Compensating Liquid Height Transducer.

BLEA—L., R. L. DIXON, Dept. 059. Adapter-Flushing Affect.

HUJSAK—E. J., W. J. KETCHUM, Dept. 952. Injector and Igniter for Large Monopropellant Reactors.

L'HEUREUX—F. J., J. J. MURPHY, Dept. 544. Undersea Surveillance Satellite System.

MAYBERRY—D. W., Dept. 491. Fiber-Optic—Solar Cell Array for Radiation and Thermal Protection.

QUITTNER—R. M., Dept. 516. Safety and Comfort Air Mattress.

Retirements
CONVAIR

DE SOLA—Ralph, Dept. 958-4. Seniority date May 4, 1955, retired Jan. 17.

GAYTON—Albert S., Dept. 130-1. Seniority date Jan. 20, 1958, retired Jan. 17.

GENTILE—Leon G., Dept. 146-6. Seniority date July 6, 1956, retired Jan. 10.

KILLICK—Philip K., Dept. 401-6. Seniority date June 11, 1959, retired Aug. 13, 1968.

LARSEN—Viviette V., Dept. 966-9. Seniority date April 16, 1952, retired Jan. 16.

WHITEMAN—John L., Dept. 515-0. Seniority date May 13, 1958, retired Jan. 24.

Rider-Driver
CONVAIR

RIDE WANTED—From 39th and Mead, East San Diego, to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Phone Kay, ext. 671 LF.

RIDE WANTED—Greenfield Drive, El Cajon, to KM plant, 8:15 a.m. to 5 p.m. shift; phone Ron M. Jones, ext. 1766 KM or (home) 442-9948.

RIDE WANTED—From 40th and El Cajon to Lindbergh Field plant. 7 a.m. to 3:30 p.m. shift. Call Maggie Linehan, ext. 688 LF.

Discount Offered For Track Meet

Tickets for the third annual San Diego Games indoor track meet at 8 p.m. Feb. 22 are on sale at CRA outlets and the CRA Health Club for $4 and $2 (a $1 saving). The tickets also cover admission to the San Diego CIF high school championship meet at 6:30 p.m.

Olympic winners competing will include Bob Beamon, long-jump; Randy Matson, shot put; Willie Davenport, 100-meter high hurdles; Charlie Green, 400-meter relay; Tom Farrell, 800-meter relay; George Young, steeple chase.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Engineering's Dept. 574-0 Wins Fourth Quarter Craftsmanship

Engineering data processing and evaluation Dept. 574-0 has been awarded the Convair division research and engineering department Craftsmanship Achievement banner for its efforts during the fourth quarter last year.

F. D. Applegate, director of product design, presented the banner to the department's Kearny Mesa and Lindbergh Field groups in duplicate ceremonies Jan. 24 on behalf of E. R. Peterson, vice president-research and engineering.

C. K. Anderson, manager, accepted the banner and an accompanying plaque at both ceremonies. Dept. 574-0 previously had won the banner for first quarter performance last year.

Applegate commended the department for establishing and meeting a goal of obtaining $50,000 in outside customer processing tasks during the quarter, for increasing its personnel versatilities and total data processing production, for operating within its indirect budget and for reducing operating cost by $140,000 through implementation of Cost Reduction Projects and Employe Suggestions.

The department had submission of 63 Employe Suggestions as one of its goals and submitted 80, making it per capita leader for the quarter among research and engineering functions.

Applegate predicted their efforts during the quarter will "pay off in the future as well as this year."

He said the department's acquisition of new business has helped make the division and its capabilities known to a larger group of people. "It's surprising sometimes how word on a 'job well done' gets around," he commented.

Research and engineering directors had reviewed progress of 77 departmental groups and sections toward 295 separate goals in selecting the quarterly banner award winner.

Mgt. Club to Hold New Member Night

Eric McCarty, National Management Association vice president for organization services, and J. V. Kappler, NMA zone president, will speak at a Convair Management Club indoctrination dinner meeting for new members at 6:30 p.m. Feb. 11 in the Bronze Room, La Mesa.

All club members are invited. Tickets are $2, on sale through club boosters.

Fair Share Award Recognizes Con-Trib Pledge to Crusade

(Continued from Page 1)

sade for support of United Community Services (UCS) of San Diego County and its 67 member agencies — based on increased giving by employes anticipated through member payroll deductions during the year.

Paul Allgire, Con-Trib-Club committee chairman and Convair supervisor of employe benefits, is serving on the UCS general budget committee which will make recommendations for UCS-agency funding. He also served in December and January on one of several UCS budget panels that reviewed budgets of the agencies for the year.

The Con-Trib-Club committee in its Jan. 23 meeting also approved grants totaling $5,385 for eight community service organizations in the San Diego and Vandenberg AFB areas.

Included was $1,500 for the National Foundation for support of birth defects-related research at Salk Institute of Biological Studies; $1,310 for the San Diego Speech and Hearing Center for purchase of tape recorders and audiometers for use at its three branches; $750 for the Pathfinders of San Diego, Inc., for its alcoholism rehabilitation program; $750 for St. Vincent de-Paul Center for its facility for the needy and its rehabilitation employment program.

Grants totaling $1,075 were approved on recommendation of the Vandenberg AFB employes' advisory committee. Included was $500 for the Tuberculosis and Health Association of Santa Barbara County; $250 for the Santa Maria Servicemens' Center; $225 for the United Cerebral Palsy Foundation, and $100 for the Arroyo Grande Family Service Association.

Top Craftsmanship Award Won by Convair Division

(Continued from Page 1)

toward more than 1,000 goals during the award year, including many related to cost reduction that resulted in more than $28 million in savings.

He said Convair manufacturing departments showed "enormous improvement" by cutting defects from 27.2 to 14.2 per 1,000 manhours and called "particularly noteworthy" the division's success in establishing and meeting goals in non-hardware areas such as research and engineering departments.

Gen. O'Neill cited accomplishments including 43 consecutive successful Atlas space booster launches, 100 per cent Atlas-Centaur reliability on the Surveyor program, work on Atlas E and F programs for Advanced Ballistic Re-Entry Systems missions, F-102 and F-106 aircraft programs and others.

"Your performance has resulted in excellent records of reliability when it counts — when the chips are down," he commented.

The general noted that last month's perfect Atlas-Centaur launch of NASA's Orbiting Astronomical Observatory-2 placed the United States' heaviest and most complex scientific payload in orbit and that cost of the payload alone was about $75 million.

"On a launch like that, a tremendous amount of time, money and talent is riding on that booster and it puts a heavy burden of responsibility on you for high quality performance—and you've met that," he said. "That must have given a kind of king-size satisfaction to you and pride in your workmanship.

"I congratulate you on the high caliber of your performance, not only on the programs I have mentioned but on all those that have preceded them over the years," he said.

Gen. O'Neill pointed out that the Air Force Systems Command has established a Sustained Award for Craftsmanship holders to recognize firms that "keep up their winning ways." He said he was confident he will be invited back for that future presentation.

Bowers called the Craftsmanship Award a "big tribute" to successful pursuit of division objectives.

"I feel today we have approached the beginning of a sustaining period of high quality," he said, but pointed out that continued performance improvement will be required to "remain at this pinnacle of success."

Medlock said "This is a milestone in our program and a starting point from which we can continue to improve."

Medlock expressed appreciation to DCAS plant representative's office personnel for their assistance—including Col. Charles F. Merz and his predecessor as plant representative, Col. James Ourand, Lt. Col. J. B. Garrison, deputy commander; A. E. Hinck, chief of quality assurance; his staff; and T. E. Evans, Zero Defects program monitor.

★ ★ ★

Guests Attend GD Ceremony

Officials from Convair division's major customer organizations were present for last week's ceremony in which the division received the Air Force Craftsmanship Award. They were introduced by Col. Charles F. Merz, Defense Contract Administration Services (DCAS) plant representative.

Other DCAS representatives included Brig. Gen. Arthur Exon, commander of the DCAS Region-Los Angeles, and Col. J. B. Garrison, deputy commander, and A. E. Hinck, chief of quality assurance, both of the DCAS plant representative's office at Kearny Mesa.

NASA was represented by Ronald Rovenger, NASA Lewis Research Center resident representative at Convair.

Air Force Space and Missile Systems Organization officials, in addition to Lt. Gen. J. W. O'Neill, SAMSO commander who presented the award, included Col. W. R. Taliaferro, deputy for launch vehicles, and Col. Hugh Wynne, Atlas program chief.

Col. Merz pointed out that it was particularly appropriate for Gen. O'Neill to present the award because of his close ties with Convair, and his role as a "key planner in the evolution of the ballistic missile program which began with the Atlas."

Test Course Series Held

Members of the first of a series of six three-week non-destructive testing courses being given by Convair division for selected supervisory and engineering personnel received certificates of completion Jan. 24.

Completing the course were representatives from American and Flying Tiger airlines, U. S. Air Force officers from Warner Robbins AFB, Ga., California State Polytechnic College in San Luis Obispo, and employes from the Fort Worth, Electric Boat and Convair divisions.

The second class, beginning this week, includes personnel from FAA Headquarters in Oklahoma City; Qantas (Australia), Allegheny and American airlines, and Convair, Stromberg Datagraphics, Fort Worth and Electric Boat employes.

K. M. Boekamp, Convair NDT Training School administrator, said similar courses will be held each month through June.

'Science Sermons' Films Scheduled

The "Upper Room," Christian Fellowship group, will show the first of 13 films tomorrow, Feb. 6 in the LF engineering auditorium.

Entitled Sermons from Science, movies will be shown at 11 a.m., 11:30 a.m. and noon tomorrow and each succeeding Thursday through May 1.



NEW RECORD—Roger Lewis, General Dynamics president, left, receives plaque from Charles Goodall of U.S. Treasury Department on behalf of Corporation's achieving record high of 76 per cent participation in 1968 payroll deduction buying of U.S. Savings Bonds.

Bond Buying by Payroll Deduction Climbs For Third Straight Year

A new Corporate record of 76 per cent participation in payroll deduction buying of U.S. Savings Bonds was established by General Dynamics in 1968. It marked the third straight record-setting year by the Corporation, which achieved 63 per cent in 1966 and 68 per cent in 1967.



NUMBER ONE — Tops among General Dynamics facilities with 100 per cent U.S. Bonds buying by payroll deduction was San Antonio facility. From left: F. O. Fernandez, production superintendent; S. F. Campos, biggest bond buyer; A. B. Perches, facility manager; S. Hernandez, factory foreman who directed Bond drive.

A plaque citing the achievement was presented recently to Roger Lewis, General Dynamics president, by Charles Goodall of the U.S. Treasury Department.

Virtually all divisions/subsidiaries increased participation during the year, Algie A. Hendrix, Corporate vice president, reported.

Best performance of any unit of the Corporation was turned in by Fort Worth division's San Antonio facility with 100 per cent. (Significantly, employes at this operation for the most part were recruited from the ranks of previously "hard core" employed!)

Corporate Headquarters ranked next with 98 per cent, followed by Pomona division at 96, Convair 94, Electro Dynamic 92, Electric Boat 83, Fort Worth 75, Stromberg Datagraphics 73, Electronics 71, Stromberg Carlson 63, Material Service 62 and Quincy 57.

Fort Worth had the most new savers—5,602. Others which showed substantial increases were Convair (3,044) and Pomona (2-881).

Largest percentage increase over 1967 was recorded by Material Service, which made a 28 per cent gain. Other large increases were noted by Pomona (16 per cent, from 80 to 96) and Convair (12 per cent, from 82 to 94).

Corporate Headquarters and Electronics each showed 11 per cent gains over 1967 participation.

Over-all, the Corporation finished the year with 18,357 "new savers." In addition, 3,571 current subscribers increased their savings.

'Operation Underbrush' Saves $3.1 Million

Savings attributed to "Operation Underbrush" efforts by General Dynamics' divisions and subsidiaries during 1968 amounted to $3.1 million. This was an increase over recent years, but short of the record $4.5 million set in 1964 and the $3.8 million recorded in 1965.

In his report to Roger Lewis, General Dynamics president, Algie A. Hendrix, Corporate vice president, noted that Convair and Pomona divisions fared exceedingly well. Convair realized savings of $1,479,000 and Pomona had $1,278,453.

Other figures were Fort Worth $286,120, Electric Boat $88,903, Corporate Headquarters $62,460, Electronics $10,812, Canadair $4,410.

The operation is designed to eliminate paper excess through periodic purges and create control mechanics to prevent future buildups.



"Just show me how to do the work . . . I already *know* how to wrestle!"

AF FOUNDATION SEEKS MEMBERS

The Air Force Historical Foundation, a non-profit organization dedicated to the preservation of history and traditions of the U.S. Air Force, is conducting a membership drive, according to its president, Gen. B. A. Schriever, USAF (ret).

Fee is $5 a year (tax deductible) and entitles members to receive the quarterly magazine, "Aerospace Historian," with articles and pictures featuring the rich heritage of aviation in which the Air Force (Air Corps) played a most important role.

The Foundation's address is Bldg. 819, Bolling Air Force Base, D.C. 20332.

'Moonships' Key Role In Apollo 8 Described

Prime data and communication links for several of the most critical decisions and commands during Apollo 8's Yuletide journey to the moon were provided by the three "moonships" converted and equipped by General Dynamics.

The instrumentation ships — USNS Vanguard, Mercury and Redstone — all contributed to the highly successful voyage of Apollo 8 and their names figured prominently in the dramatic play-by-play reports that flowed from mission control in Houston.

On Dec. 21, the first day of the six-day flight, voices of the three astronauts reached Houston and millions of TV-radio listeners around the world by way of the unified S-band radars aboard Vanguard and Mercury.

To Mercury, in the Pacific about 1,000 miles southwest of Hawaii, fell the distinction of providing the data and relaying the historic command that sent the astronauts hurtling out of earth orbit at 24,200 miles an hour on their rocketing trajectory toward the moon.

As Apollo 8 returned from its half-million mile journey and man's first rendezvous with the moon, its blazing descent into the earth's atmosphere was tracked by Redstone, on station in the Pacific west of Hawaii.

Redstone provided the sole contact with the returning astronauts for about five minutes at this very crucial stage, before the speed and heat of their earthward dive blacked out communications for three or four minutes.

Redstone started tracking as the spacecraft began its descent and poured a constant flow of data — by telemetry and other means — into Houston to pinpoint the downward plunge of the capsule.

Redstone was in communication with the astronauts by voice and by telemetry signals, checking such vital statistics as cabin pressure, temperature, systems function and the physical condition of the astronauts themselves.

Last word from Houston to the astronauts before blackout was a terse message via the Redstone's S-band, "You're looking good." This was about 14 minutes before final splashdown in the Pacific, some 5,000 yards from the carrier USS Yorktown.

Vanguard, on station in the Atlantic 1,000 miles downrange from Cape Kennedy, provided the link for the first strong voice communication with the astronauts, then aloft for about eight minutes after the start of their 537,000-mile journey to the moon and back.

Vanguard began relaying back to Houston voluminous, high-speed data on which the decision to go into earth orbit would be based.

From Vanguard's high-speed telemetry signals, Houston was able to determine, for example, that astronaut Frank Lovell, on the center couch, had a heart beat of around 69 or 70, and was breathing at a steady 20 to 25 respirations per minute.

The three instrumentation ships are "jumboized" T-2 class tankers from World War II, converted and specially equipped for the Apollo program by General Dynamics.

GD's Electronics division was prime contractor and supplied eight of the 12 major electronics systems aboard each ship. Six other units of the company participated in the unique ship conversion program.

Quincy division did the ships' engineering and shipyard work and Electric Boat division provided the ships' position and attitude-measuring systems. Convair division built the 30-foot diameter telemetry antenna and Pomona division furnished test personnel.

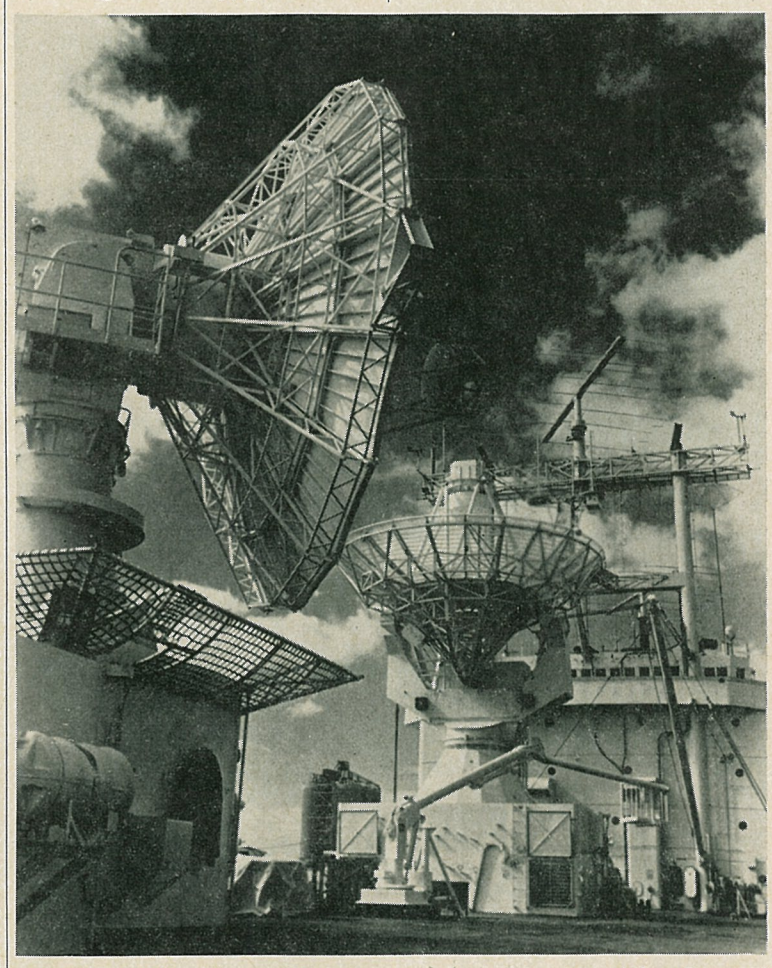
Switchboards, dial telephones and other components of on-board communications were supplied by Stromberg-Carlson.

Conversion of the ships involved cutting out the midsection of each tanker and replacing it with a larger instrumentation midbody, lengthening the ship to 595 feet and broadening its beam to 75 feet.

The ships are operated for the Goddard Space Flight Center's global tracking network by the Air Force, Navy and Military Sea Transportation Service. Each vessel carries a crew of 85 and 108 technical personnel who operate and maintain systems.

ENGINEERS CO-AUTHOR IRIS TECHNICAL PAPER

Five members of Pomona division engineering department co-authored a technical paper, "Infrared Radiation Characteristics of the Redeye Sustainer Rocket Motor," presented at a recent IRIS meeting in San Diego. The co-authors were A. G. Tescher, M. C. Abrams, G. W. Ashley, D. W. Blay and E. O. Buenting.



VITAL LINK—Three ships, converted and equipped by General Dynamics, played important part in Apollo 8 moon orbit by providing communications network. They were stationed in mid-ocean around the world.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—The steno in our group passes out the paychecks. I thought supervisors were supposed to do this.

A—You are right. Any supervisor who permits clerks or stenos to distribute paychecks is in violation of company policy. (See SP E-62.)

★ ★ ★

Q—**GD/NEWS** had a story last year about models of Convair products being available. My wife tried to order an SLV-3/Centaur for me but was told they were sold out. Does Convair plan to order more?

A—Not that version. However, SLV-3X/Centaur and SLV/3A are available, as well as models of F-102 and F-106. Deal direct with the vendor, W. J. Hyatt, Inc., 7455 Greenbush Ave., North Hollywood 91605. Prices are SLV-3X, $17.35; SLV-3A, $16.32, and $20.20 for F-102 and F-106.

★ ★ ★

Q—I recently received a letter from Convair that had postage due (6 cents). How could this happen?

A—Probably a mechanical slip-up. Convair uses a postage meter and with the high volume of mail a slip can occur. Your 6 cents is enclosed.

★ ★ ★

Q—Several times lately my boss has mentioned the "blue sheet." What's he talking about?

A—Probably the Convair Weekly Log. This is a brief report of progress on major programs, published on Mondays for supervisors so that they can keep themselves and their people up to date. Incidentally, it is printed on blue.

Amateur Matador

Fascination of Bull Fighting Grips SD Design Engineer

What does a Convair division design engineer who is an amateur bullfighter spend his Employe Suggestion award money on? Why, a bull fighter's cape, what else?

That's how it is with Bill "Guillermo" Just of Dept. 508, model design section at Lindbergh Field plant's wind tunnel, who says he is going to buy a new cape with a portion of his $148 ES award.



OLE—Bill Just displays ear he was awarded after dispatching his first bull in ring at Juarez last August.

The bullfight bug bit Bill and his wife, Cherie, about four years ago and they share the same enthusiasm for the spectacle. In fact, Cherie also has fought in the novice ring, as has the couple's youngest son, Wyatt, 12. They have two other children, Su, 20, and Billy Jr., 15, but neither are bullfight aficionados.

Bill dispatched his first bull last August during the six-day convention of the National Association of Taurine Clubs at Juarez. He was awarded an ear, considered an excellent performance.

"It takes a near flawless effort to win two ears and the tail," he said, "because your cape work must be excellent and the bull almost invariably must be dispatched with the first sword thrust."

Bill feels his interest in bullfighting was stirred through TV exposure, proximity to the border and the fact he speaks Spanish. He and Cherie started attending Corridas in Tijuana in 1964 and were so fascinated by the drama and excitement of the bull ring that they, with five other aficionados, founded a club they call, "Los Muleteros Aficionados Practicos de California."

Bill claims it is the only bullfight club in America in which all members are practicing aficionados. Other U. S. groups merely are social or fan clubs, he said.

Members of Just's club practice regularly with cape and muleta at various locations in San Diego County and whenever possible with calves in Mexico. They also give lessons and talks on the art. Bullfights or festivals are staged periodically at Tijuana, Ensenada and elsewhere, whenever finances permit the purchase of a toro. Animals cost approximately $240 apiece, but a portion of this is reclaimed upon sale of tickets.

The average bullfight, according to Bill, lasts about 20 minutes. It opens with the matador's first pass with the capote or large cape. This is followed by entrance of the picadors, who prepare the animal by prodding him with lances. Banderilleros then embellish the ritual by placing banderillas.

Main event or "faena" follows, in which the matador displays his prowess with the muleta or small red cape. During the faena the matador attempts to train the bull into following the cape in a rhythmic dance, which culminates with the sword thrust or thrusts, depending on the matador's skill.

Bill plans to perform next in Tijuana in April. His club will fight four bulls in competition with four Mexican amateur bullfighters.

The "matador" says his club, of which he is president and his wife treasurer, is open to persons genuinely interested in bullfighting. Aficionados can contact him at home (469-2789) or at Lindbergh Field (ext. 1286).

SAMSO, Convair VE Reps. Confer On '69 Plans

(Continued from Page 1)

contractors, reviewed some of the management philosophies and views of Lt. Gen. John W. O'Neill, SAMSO commander, in relation to VE program benefits and said similar conferences are being scheduled with other contractors to aid in identifying and eliminating problems and for "better mutual understanding."

Col. Scott emphasized that the value engineering program at SAMSO has become an integral part of its management system and that Gen. O'Neill is enthusiastic about the program and has become personally involved in it.

"We have one common denominator — saving dollars through value engineering change proposals (VECPs)," he said. "We in the Air Force are pleased to see the kind of savings that can be made. Industry should be equally pleased."

He said SAMSO plans to expedite processing of VECPs from Convair and other contractors — with 30-day approval or disapproval of proposals expected in most cases.

SAMSO's goal for VECPs from contractors for this year has been increased substantially to 190 with 70 per cent approval and $14 million in savings also as goals.

Col. Wynne said as Atlas program manager he is interested in doing a quality job at lowest possible cost.

"We are behind the (VE) program — not just giving it lip service," he commented.

John Milling, Convair division controller, welcomed the group and pointed out that Jack Bowers, Convair general manager, has established improvement of profit by $500,000 through VECPs as one of 12 major division goals for the year. Grant Hansen, vice president-launch vehicle programs, and Walt Blakey, director of contracts, also were present.

E. D. Heller, conference chairman and Convair manager of cost reduction and value control, reviewed division 1968 cost reduction and value engineering achievements and outlined 1969 program plans.

Heller said the division has a goal of $16,816,100 from cost reduction and value control efforts and will have the equivalent of 37 full-time employes staffing these programs.

W. W. Johnson, budgets chief for Convair launch vehicle programs, presented VE staffing and program plans for LVP departments.

Hansen to Attend Executive Course

Grant L. Hansen, Convair division vice president-launch vehicle programs, has been selected to attend a 13-week Advanced Management Program at Harvard University Graduate School of Business.

Selected executives from key management positions in business, industry, the military services and governmental agencies including NASA, the CIA and the AEC will attend the full-time, live-in course.

Members of the group, all with more than 15 years management experience, attend classes six days a week.

Hansen joined Convair as chief design engineer in 1960 and has served as vice president-launch vehicle programs since 1965.

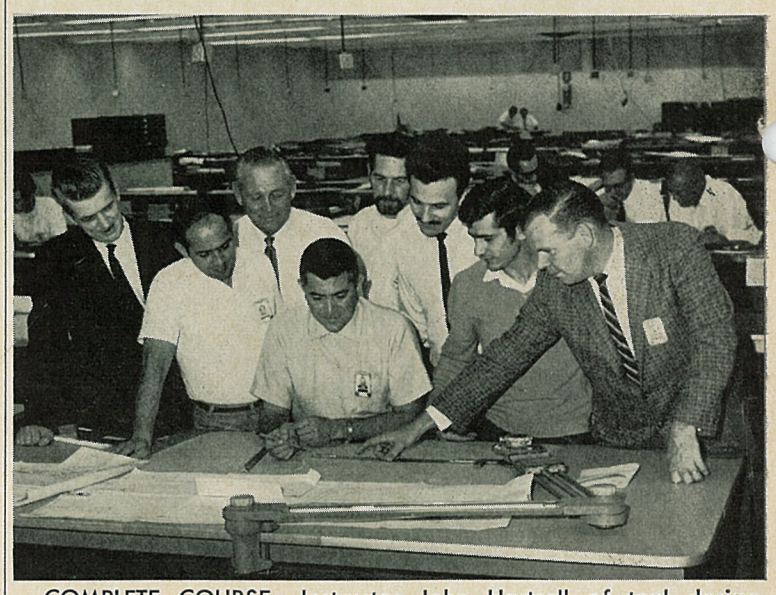
CRA Hams Provide Race Communications

Five members of the CRA Amateur Radio Club with four transmitters handled communications Jan. 19 for a 133-mile "off-road" race sponsored by the International Desert Racing Association in the Borrego Desert.

They were Joe Miller, Alex Halyburton, Red Rush, Bill Roden and Don Lanthier.



VALUE PLANNING—Air Force Space and Missile Systems Organization value engineering program officials look on as E. D. Heller, Convair manager of cost reduction and value control, describes 1969 program plans. From left are Pat McGuinness, staff value engineer; M. V. Fuerst, Atlas program contracting officer; Col. Hugh Wynne, Atlas program director; Col. George W. Scott, chief of technical requirements and standards.



COMPLETE COURSE—Instructor John Hartsell of tool design, right, goes over technical point with group of Convair shop men who completed 168-hour tool design training class. Men have been assigned to tool design on DC-10 project. Graduates, from left, are James Williams, Peter Weibrecht, Carroll Griffin, Carlos Diz, Gerald Rabichaud, Roland De Bon and Dominic Boccia.

One in a Million

Ever Heard of a Popular Ump?

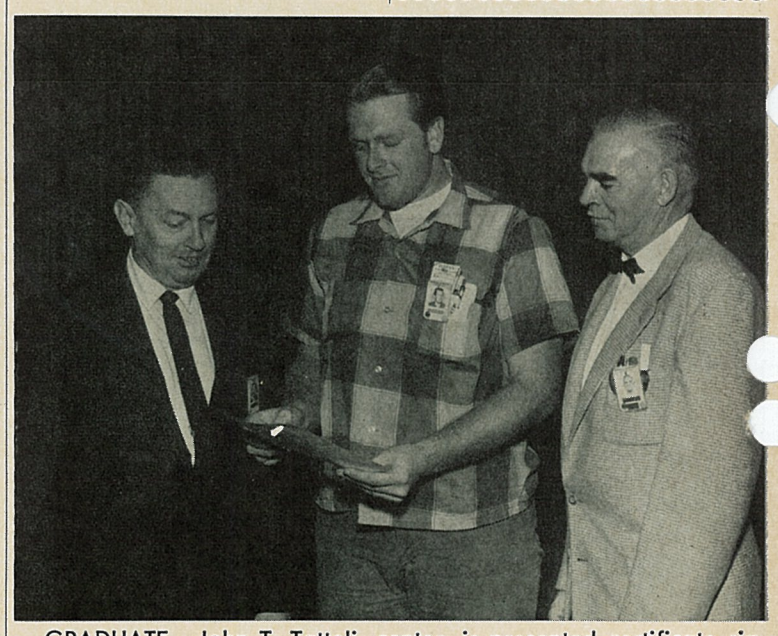
It's usually the players who take home the trophies—but not in the case of Henry J. "Hank" Hartin, master schedule analyst in Convair's Dept. 953-1.

In a belated presentation last month, Hartin received a trophy from Rainbow Little League "cap" division baseball teams engraved "A special thanks to a man with a big thumb and a heart to match."

Hartin was a volunteer umpire for the eight minor and cap division teams playing at Walker Scott Field on Kearny Mesa last year — frequently calling the strikes three or four nights a week because other volunteers were scarce.

The kids' "favorite ump" was scheduled to receive the surprise trophy at an awards ceremony last July but was unable to attend, so it was presented at a league board meeting. Hartin says a Little League umpire's biggest problem is with the players' parents. He has been known to stop a game to provide a little "guidance" for a parent who "boos" or downgrades a youngster on the field.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.



GRADUATE—John T. Tattoli, center, is presented certificate signifying graduation from apprentice ranks to journeyman machinist from Jim Adamson, left, manager of operations, Lindbergh Field. At right is Stan Krebs, group foreman of Dept. 015, to which Tattoli has been assigned. Tattoli, who started with Convair in 1964, has completed all requirements for an AS degree at San Diego Evening College. He won local apprentice machinist contest.

CRA Riding Club Awards Presented

Topping last month's CRA Riding Club awards program for 1968 competition was presentation of the Pop Beam Trophy to Laura Berry, 10-year old daughter of Commissioner Steve Berry.

The trophy goes to the outstanding youngster who best exemplifies the spirit and tradition of the club throughout the year. Last year's winner was Susan Miller.

Gayla Washburn was overall high point winner while gymkhana awards went to Sheila Payne, 18 and over bracket; Mike DeLeonardo, 16-17 age bracket and Susan Harmer, 15 and under. In equitation, David Watson and Ken Smith tied in 18 and over division; Mickey Donahoo Griffin took 15-17 age group honors and Sandy Nash won 14 and under award.

Clyde Donahoo, Riding Club president, presented a pair of binoculars to Berry "for his hard work, time and effort put into club activities during the past year."

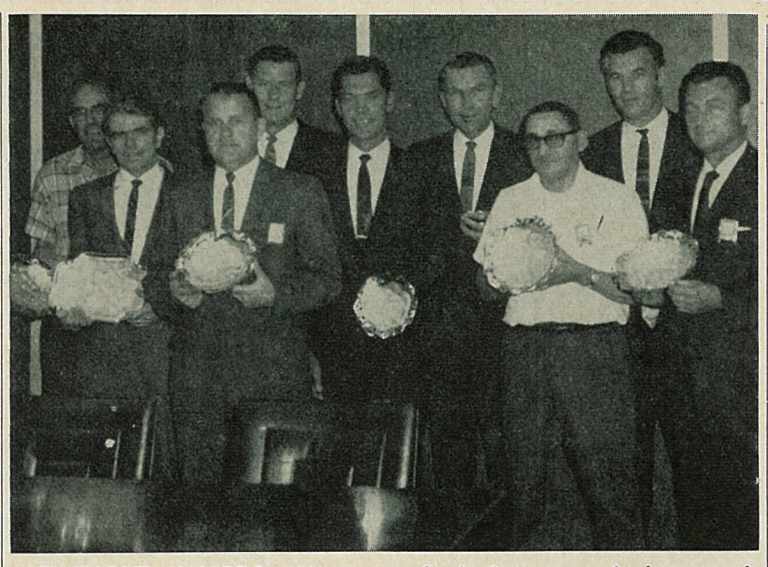
Special Piloting Course Under Way

A 13-week U. S. Power Squadron course in elementary piloting is being held Tuesdays in CRA Clubhouse at Kearny Mesa.

R. J. Cook of Convair's Dept. 130-1, ext. 3731 KM, is instructor.

The course will cover rules and regulations of small boat handling, safety, seamanship, navigation and dead-reckoning.

There will be no charge for the course except for a textbook.



TWILIGHT AWARDS—Members of winning teams in last year's Electronics-SD twilight golf league recently received trophies for their efforts. Displaying silver, left to right, are Fred Maus, Don Costelow (recipient of special award for serving as league director), Fred Acomb, Ernie Huber, Jim Brown, Frank Packard, John DeTate, Cal Burns and Gar Herring. Not present for photo, R. M. McIntyre, T. Boren and G. L. Vance.

Annual Big Bear Snow-Trek Scheduled For Feb. 28 Weekend

For the 16th year, General Dynamics folk have an opportunity to spend a weekend frolicking in the snow at Big Bear Lake. Sponsored by the Convair Ice Skating Club, the outing is slated for the weekend of Feb. 28-March 2.

Bud Davies, CRA commissioner, said Wawona Lodge has been leased for the stay and offers ten rooms, each with private bath, ideal for two to five persons. In addition, there are 18 surrounding housekeeping cabins for family groups of up to 12.

No formal activity program is planned, but a variety of winter sports, including skiing, skating, and tobaggoning will be available. A private ice skating session is set for Sunday morning.

Provided will be three meals including Saturday and Sunday breakfast and Saturday night dinner, after which facilities will be set up for card playing, dancing, or just plain relaxing. The traditional late pizza supper is set for 11:30 p.m. Saturday evening.

Complete package price per person is $15, with children under 8 going half price. Reservations may be made at employe services outlets or CRA Clubhouse, Kearny Mesa. No reservations will be accepted or refunds made after Feb. 21.

Those planning to make the trip will provide their own transportation and are cautioned to carry tire chains, flares and other emergency equipment. Maps and detailed instructions will be mailed about a week in advance.

For further information call Bud Davies or Penny Serbousek at LF ext. 2283 or Joan Kosen at 274-5227 or 453-0530.



EXOTIC—That's White Polish rooster Ricky Justus, son of Convair man, is holding. He raises 21 uncommon breeds of chickens as hobby.

Houdans, Lakevelders

Raising Rare Chickens Offers Novel Hobby For Convair Son

Raising Houdans, Lakevelders, Anauconas, Yokahamas, silver-spangled Hamburgs and partridge cochins has become a fascinating hobby for Richard L. "Ricky" Justus, 13, son of A. C. Justus, data processing analyst in Convair's Dept. 101-1.

They're exotic chickens, and Ricky has 73 of them in pens at his Lakeside home. Included are 21 different breeds with at least one rooster and two hens of each variety.

In addition to their exotic appearance, Ricky's chickens have been establishing some new poultry records for San Diego County.

One of his White Polish pullets laid three eggs—none with a yoke—when she was only a month old. Most pullets don't start laying until they're six months old.

Ricky said a poultry expert from the county Agricultural Extension Service wanted to have an autopsy performed on the miraculous pullet—but he would have none of that!

The Anauconas lay eggs of different colors, apparently depending on their mood. The Yokahamas live in trees and have been known to have 25-foot-long tails.

Ricky, an eighth grader at Lakeside Junior High, purchases the unique birds by mail from a hatchery in Webster City, Iowa.

He plans to display some of them at the Southern California Exposition next summer and to sell offspring from the flock.

Meanwhile, Dutchess, the family's pet Keeshound from The Netherlands, stands guard over the pens to make sure none of the unusual chicks is stolen.

Ricky's brother, Bruce, 14, couldn't care less about the chicken raising project. He's interested in motors and electronics.

Adventurers Club Plans Baja Jaunt

CRA Adventurers Club will set up a car camp Saturday and Sunday, Feb. 22-23 when they travel to Tajo Canyon in Baja, Calif.

Approximately 90 miles from San Diego through Tecate and El Condor, those making the trek will rendezvous at 8 a.m., Feb. 22 in Tecate.

Saturday will be spent establishing the camp in an area where palms and clear water pools are in abundance. Side trips to observation points along the canyon rims is set for Saturday and a hike for Sunday.

Information can be obtained by calling John Smaldino, trip leader, at 279-2798.

CRA Table Tennis Tourney to Begin

Players for this weekend's table tennis tournament at CRA Clubhouse auditorium, KM, should sign up between 9 and 10 a.m. Saturday.

Patti Martinez, U. S. and Canada Women's National table tennis champion, will give an exhibition at 10 a.m. followed immediately by the start of the CRA tournament.

CYCLISTS SLATE 25-MILE RIDE

CRA Bicycle Club members will make a 25-mile EI Monte Park-Lakeside ride Saturday (Feb. 8), leaving at 9 a.m. from Parkway Bowl in El Cajon. Ride leader will be John Gacho, ext. 2253 LF or (home) 465-9524.

CRA and Mgt. Club Will Sponsor Spring Tennis Tournament

A spring tennis tournament for General Dynamics employes and family members, sponsored by CRA and Convair Management Club, will begin Feb. 15 on Mesa College and Morley Field courts.

Novice and advanced men's singles will be played Feb. 15-16; intermediate men's singles, March 1-2; novice and advanced men's doubles, Feb. 22-23; intermediate men's doubles, March 8-9; intermediate women's singles, March 1-2; novice women's singles, March 8-9; mixed doubles, March 15.

Cost will be 75 cents per event, payable just before each match. Contestants will be notified of playing time and location the Thursday before their weekend for play. Trophies will be awarded to winners in each division.

Players must register by 4 p.m. Feb. 12 by phoning or mailing an entry form to the tournament committee representative for their event.

Committee members are Cecil Norwood, ext. 2367 KM, advanced; Mike Griggs, ext. 2367 KM, intermediate; Milt Kreml, ext. 3439 KM, novice; Thelma Zivolich, 223-1575, or Sharron Williams, 277-6206, women's and mixed.

Class Planned For Shooters

A training class for new pistol shooters will be offered by the Convair Pistol Club immediately following its next shoot Sunday, Feb. 9, 9 a.m., at the San Diego Police Range.

The class will start at 11 a.m. and will be open to women, as well as men. No pistol is required. The class will be taught by Don O'Brien, an NRA instructor.

Additional information can be obtained by contacting Warren Walker at LF, ext. 1104.

O'Brien was a double winner at the club's last shoot. He took first places in masters and .22 caliber short national competitions. Richard Sutton prevailed in expert class. Results:

Masters — O'Brien 287-10x, Roland Schneider 284-10x; Expert — Sutton 267-4x, Bill Worthington 266-1x; Short national — O'Brien 281, Schneider 280, Ernie Kampmann 258, Walker 255.

Briefings Scheduled For Tour of Europe

Plans for a 22-day, CRA-sponsored Grand Tour of Europe will be discussed at a meeting at 7:30 p.m. today (Feb. 5) in CRA Clubhouse at Kearny Mesa.

Tour cost will be $839 per person. The group will leave May 17 and will tour Copenhagen, Brussels, Heidelberg, Lucerne, Innsbruck, Venice, Florence, Rome, Pisa, Nice, Paris and London.

Round - trip transportation, tourist-class hotel accommodations, sightseeing tours and some meals will be covered in the "package."

Films will be shown, refreshments served and door prizes given at tonight's meeting.

Garden Club Plans Visitors Night

A "Special Visitors Garden night" will be presented by CRA Garden Club this evening in the Floral Bldg., Balboa Park beginning at 7:30 p.m.

Aimed at the visitor or tourist in conjunction with San Diego's 200th Anniversary, the night will feature demonstrations on bare root trees and rose planting/pruning.

Refreshments will be served and door prizes awarded.

Cactus Collecting Program Planned

A program, "Cactus Collecting in the Deserts of Mexico" will be presented in the CRA Clubhouse auditorium Feb. 19, 7:30 p.m.

Sponsored jointly by CRA Adventurers Club and Cactus and Succulent Society of San Diego, the program will be given by Charles Glass and Bob Foster, operators of Abbey Gardens in Los Angeles.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, March 1. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard.

Square Dancers Appear on TV

Thirteen couples from the Dynamic Eights Square Dance Club recently appeared in a western musical program on Channel 39 (KCST). They will appear again on March 6 from 7 to 8 p.m.

Dynamic Eights dancers were Marty and Rosemary Stutz, Bob and Bonnie Schappelle, Bob and Thelma Ahrensberg, Ken and Agnes Gates, Al and Glenna Kelso, Bob and Helen Kostlan, Ezra and Ruth Lancaster, Jerry and Letha Lemen, Andy and Nancy Anderson, John and Joanne Young, Bob and Virginia Bowman, Skee and Doris Salefski and Clark and Aillene Elliott.

Anyone interested in learning to square dance is invited to attend a beginners' class being held Tuesday evenings in the CRA Clubhouse from 7 to 10 p.m. Registration is open until Feb. 11.

Additional information can be obtained by contacting John Young at LF, ext. 2440.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Feb. 11. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting Feb. 19, 7:30 p.m. Car Camp to Tajo Canyon, Baja, Calif., Feb. 22-23.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting Feb. 16, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet each Tuesday and Thursday, 7-10 p.m.

CHESS—Play each Wednesday, 7 p.m.

CHORUS—Rehearsals 7:30 p.m., Mondays.

COINEERS—Meeting Feb. 10, 8 p.m.

FENCING—Workouts and instruction Friday, 7:30-10 p.m.; YWCA, 10th and C Sts.

FISHING CLUB—Meeting Feb. 18, Gillespie Field Clubhouse. Potluck 6:30; meeting 7:30 p.m.

GARDEN CLUB—"Special Visitors Garden Night" meeting tonight, 7:30 p.m. Floral Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

HI-FI MUSIC—Meeting Feb. 11, 7:30 p.m.

ICE SKATING—GD family skate night Thursday, 6:15 to 7:45 p.m., Mission Valley Ice Arena.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m. CRA Missile Park.

PISTOL CLUB—Training class offered Feb. 9, 11 a.m., San Diego Police Range. Shoot Feb. 9, 9 a.m., S.D. Police Pistol Range.

RADIO CLUB—Meeting Feb. 6, 7:30 p.m.

RIDING CLUB — Meet Wednesday, Feb. 12, 7:30 p.m.

RIFLE CLUB—Senior shoot, Feb. 12, 7:30 p.m., Gillespie Field Range.

ROCKHOUNDS—Meeting, Feb. 12, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKIN DIVING—Meeting Feb. 12, 7:30 p.m.

SPORTS CAR CLUB—Meeting Feb. 12, 7:30 p.m., Convair executive dining room, Lindbergh Field.

STAMP CLUB—Meeting Feb. 13, 7 p.m.

TENNIS—Tournament starts Feb. 15, Mesa College and Morley Field Courts. Events include novice, intermediate, and advanced, singles and doubles.

TROPICAL FISH—Meeting and Workshop, Feb. 17, 7:30 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

Escape Capsule Balance Checked by 'Flipping'

A giant 35-foot high steel fixture is being used in Fort Worth division's Dept. 155 to "flip" the 2,500-pound F-111 escape module into a number of positions.

Purpose of the maneuvers is to verify the module's center-of-gravity. The capsule must be in virtually perfect "balance" if it is to function properly during an ejection.

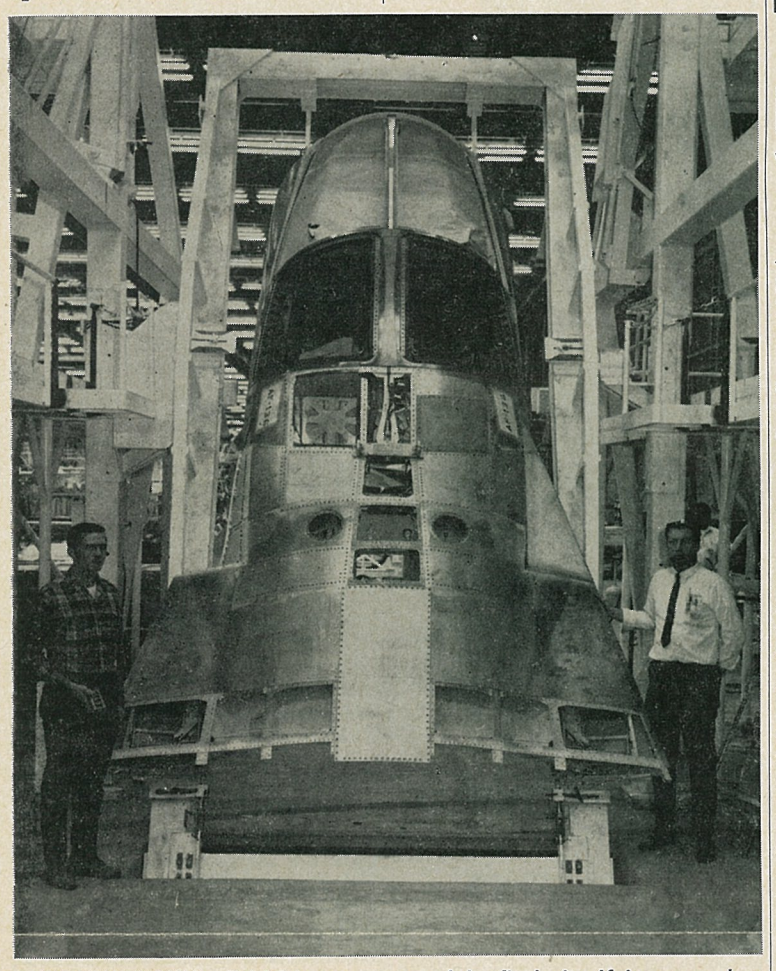
Initially, the big module is positioned vertically, then allowed to dangle from a crossbar until it is in perfect balance. A marker spots the "water line."

Then the module is turned upside down and suspended from a single steel pin. When the capsule comes to rest in one position, the station line is noted.

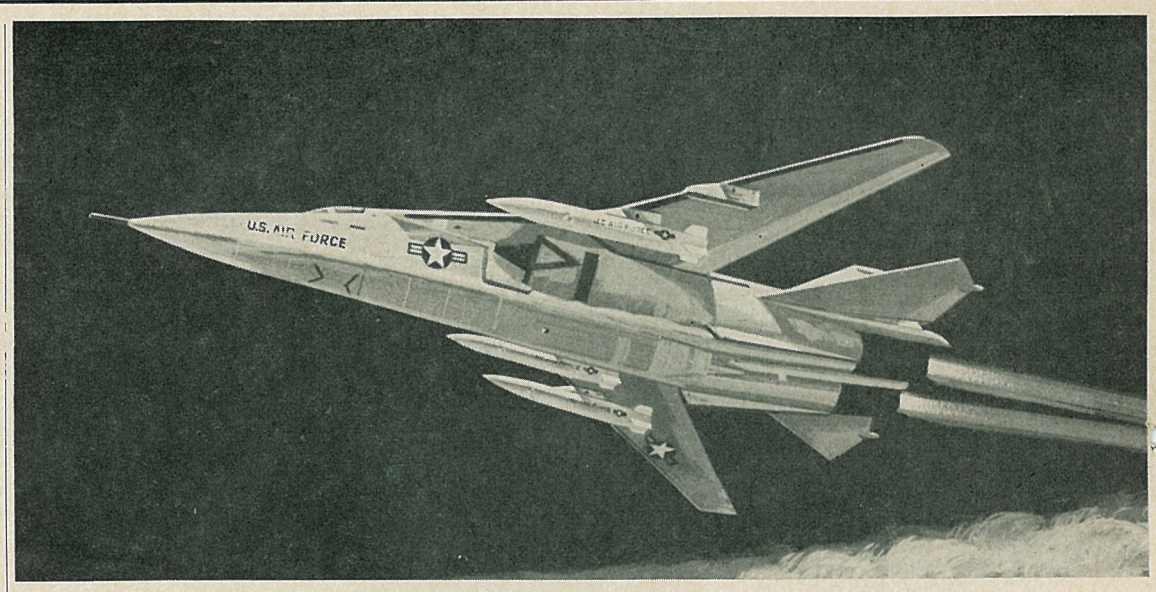
The capsule is removed from the fixture and weighed, and the information turned over to engineers and recorded permanently.

If it's later determined that the module is not in perfect balance, ballasts of lead or pellet bags will be installed as required.

The 185-pound rocket motor used to propel the module away from a stricken plane is also installed in the new fixture.



TOPSY-TURVY—F-111A escape module finds itself in a number of positions during center-of-gravity checks in new fixture. Above, capsule is positioned vertically by K. E. Koterba, left, Dept. 155, and J. O. Jones, Dept. 156 foreman, for "water line" check.



FIRE ONE—Artist's conception shows FB-111 loaded with SRAM missiles, having just fired one.

Bomber Version of F-111 Armed With 'Brainy' Supersonic Attack Missile

A new dimension in capability —SRAM—is being developed for Strategic Air Command FB-111As, bomber version of the F-111.

SRAM stands for short range attack missile. The air-to-ground weapon has a nuclear warhead capability and can be launched throughout the flight envelope of the FB-111A, including operation at just above the tree-tops in the terrain-following mode.

SRAM is "brainy" in its own right in that the missile travels at supersonic speeds and is able to penetrate complex enemy defenses after being launched from an aircraft miles from the target.

For this reason two digital computers, one in the aircraft and another in the missile, are required to instruct and then guide the missile to the target.

"The aerodynamics advancement which marks the SRAM technology involves squeezing a lot of velocity and range out of a relatively small solid propellant rocket motor which results in some exceptional heat loads and pressures," said Jim Goodman project engineer for FB-111A/SRAM integration at Fort Worth division.

Prime contractor for SRAM development is The Boeing Company at Seattle, Wash. Current plans call for deployment of SRAM on the FB-111A and late B-52 models. Work is progressing at full throttle with the development cycle entering the testing phase.

In the FB-111A/SRAM system, three different computers must continually exchange information: "Before an FB-111A loaded with SRAMs ever leaves the ground," said Goodman, "the electronic brains aboard the aircraft and built into the missile must be told what they are to do." The computations continue from aircraft takeoff to missile launch so that SRAM knows where it is, where it is going and how it is to get to the target after being launched.

To insure operational capability, a comprehensive test program is planned. Boeing is conducting extensive tests of the missile system at the Space Center in Seattle. SRAM subsystems are checked, circuit by circuit, then tested in concert with each other. This building-block approach for subsystems was continued until a complete missile was ready for laboratory static electronic flight.

To make the test realistic, engineers designed and built in the lab an electronic FB-111A. These simulators duplicate every electrical and electronic input furnished to the missile by the aircraft so functional tests can be made and computer programs developed.

Once the electronic SRAM flights are completed at Boeing, the real test of the design will begin when the systems will be "married" to actual aircraft systems. The work will be done in Fort Worth's Integrated Systems Laboratory.

Flight testing of the SRAM will also be conducted from Fort Worth. This testing started in November when F-111A No. 29, previously modified to an FB-111A prototype, began flying missions with dummy SRAMs aboard. A series of weapons-bay and pylon drops at various heights and speeds is being accomplished with dummy missiles to determine the missile-separation characteristics. Later, another FB-111A prototype, F-111A No. 18, will carry test missiles from the four pivoting pylon stations in a series of flutter tests.

Launching of live missiles is slated to begin this fall. FB-111A No. 5, a production bomber, will be used for these tests once the systems have been installed after completion of the integration tests in the Systems Laboratory. Live firings will be made over the White Sands Missile Range in New Mexico, where the performance of the weapon systems can be measured.

About 70 engineers from Boeing are presently in residence at Fort Worth to support this extensive test program. This number will increase, according to Doug Webendorfer, who is the Boeing base manager at Fort Worth, to about 125 as the test program tempo increases.

GD Engineers Assist In DC-10 Test Work

Convair division's multi-million dollar DC-10 fuselage project covers a wide range of activities, including some off-site functions.

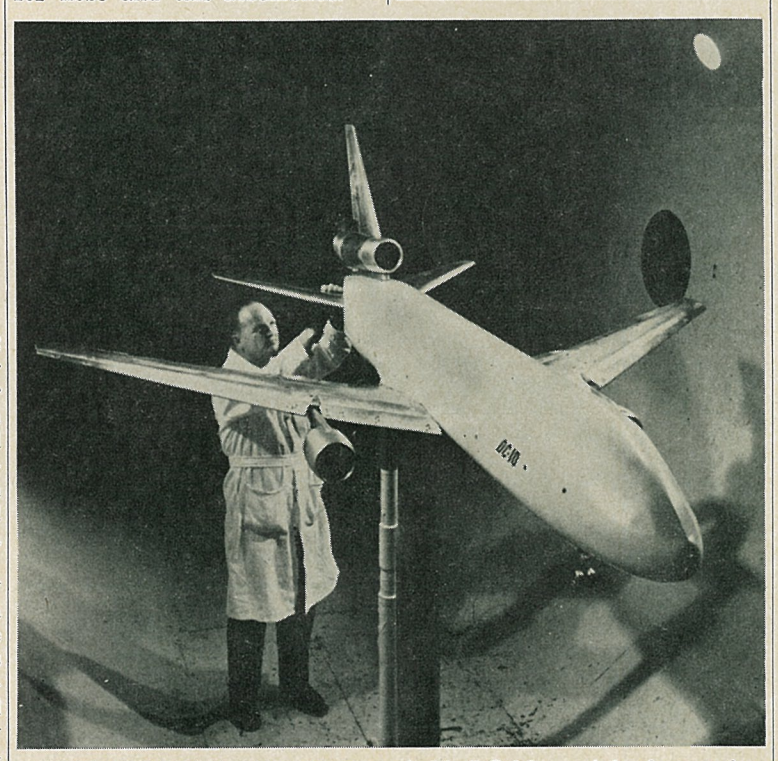
One such has been the assignment of engineers to Long Beach, Calif. to assist with wind tunnel design work on models undergoing an extensive testing program.

Tests involved seven complete and 14 partial models in 14 wind tunnels across the nation. Much of the testing was executed at the National Aeronautics and Space Administration's Ames Research Center at Moffett Field, Calif.

Objective was to obtain force and moment data for evaluating the high-lift system and stability and control characteristics.

The 12-foot diameter tunnel at Ames is capable of speeds from zero to Mach 1. Pressure data is picked up by sensors within the model and recorded outside the chamber on magnetic tape for subsequent data reduction.

Douglas Aircraft Company division of McDonnell Douglas is developing the DC-10 for airline operation, starting in 1971. Convair division is fabricating the DC-10 fuselage sections, except for nose and tail assemblies.



TEST PROGRAM—Here's one of 21 DC-10 models that underwent extensive wind tunnel testing at 14 wind tunnels. Engineer Donald Brodersen of McDonnell Douglas Corp. prepares model for testing. Convair division engineers participated in program.

B-58s to Take Part In Defense Exercise

Strategic Air Command B-52 Stratofortress and B-58 Hustler bombers will participate with air defense forces of the North American Air Defense Command (NORAD) in a joint training exercise overflying the midwestern part of Canada and the United States during the evening of Feb. 5 and early morning of Feb. 6.

The SAC bombers will overfly Ontario, Manitoba, Saskatchewan and Alberta in Canada. Over the United States, exercise bombers and fighters will overfly Montana, Idaho, Wyoming, North and South Dakota, Colorado, New Mexico, Texas, Oklahoma, Missouri, Kansas, Nebraska, Arkansas, Louisiana, Illinois, Iowa, Minnesota, Michigan and Wisconsin.

USS Milwaukee Christened; She's Navy's Newest Vessel

USS Milwaukee has joined her sister ship USS Wichita at the Quincy division's outfitting Pier No. 1 after the second Navy oiler's christening last month.

Mrs. Henry W. Maier, wife of the mayor of the Wisconsin city after which the ship was named, scored a perfect hit on her first swing of the christening bottle of champagne.

With the bottle breaking and Mrs. Maier's "in the name of the United States, I christen thee USS Milwaukee," the giant ship became the Navy's newest vessel.

Watching Mrs. Maier perform the ancient shipbuilding ritual were her husband; daughter Melanie Marie, who was maid of honor; and more than 200 guests of the Quincy division.

The christening followed a brief program that included remarks by General Manager Robert V. Laney and Mayor Maier.

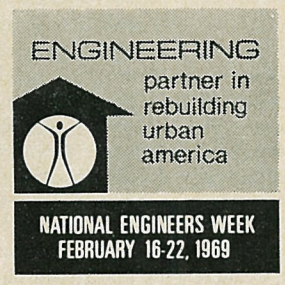
Mrs. Maier was escorted to the christening station by Carl G. Holschuh, vice president for General Dynamics' marine systems group.

As the christening bottle shattered against Milwaukee's bow, streams of water colored red, white (natural) and blue flowed into the ship's building basin.

The ship was not moved from the basin until the following morning. Tow boats moved her out of the basin, into Fore River and to the south side of Pier 1 beside USS Wichita.

Wichita, lead ship of the new replenishment fleet oiler class, will soon be putting to sea for pre-acceptance trials, last major event before delivery to the Navy.

As of the end of January, the Quincy division had four of her six AORs in varying stages of construction. The keel of AOR-4 was put down. Kansas City (AOR-3) was started on Slip 12 last April. Definite keel laying dates for AORs 5 and 6 have not been announced.



Next Deadline For Stock Plan Feb. 28

General Dynamics employes are reminded that Feb. 28 is the next deadline for enrolling or making changes in the General Dynamics Savings and Stock Investment Plan. Applications made in February will become effective at the start of the second calendar quarter on April 1.

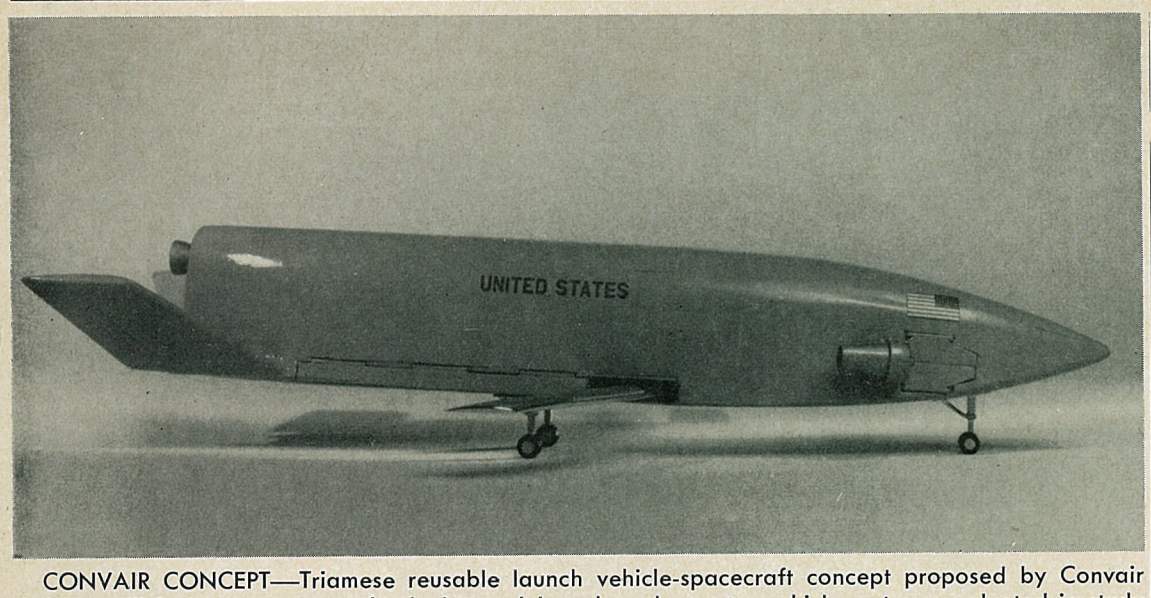
Employes with a year's service or more may enroll 30 days prior to beginning of any calendar quarter. The same deadlines apply to making changes in existing individual plans.

Application forms are available from employe services.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 5 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, March 5, 1969



CONVAIR CONCEPT—Triamese reusable launch vehicle-spacecraft concept proposed by Convair division will be among space shuttle integral launch and re-entry vehicle systems evaluated in study for NASA Marshall Space Flight Center. Photo shows model of one of them as it would land with wings and turbofan engines extended. (Story on page 2.)

Two More Centaurs Ordered by NASA

Convair division has received a $5,334,940 follow-on NASA contract for production of Centaur vehicles for Atlas-Centaur 23 and 24 missions to send Mariner spacecraft to orbit the planet Mars in 1971.

I. U. Eggert, Convair NASA-contracts administrator, said the contract covers material procurement, fabrication and factory checkout of the two Centaur vehicles and related hardware including insulation panels, nose fairings and interstage adapters. Delivery is scheduled in October and December, 1970.

Convair personnel who assisted in contract negotiations at NASA's Lewis Research Center were Jack Edwards, Jack Cannady, Seymour Zeenkov, Jack Cummings, Richard Taddiken, William Bennett and Jess Trenton.

The follow-on brought total value of the contract for production of nine Centaur vehicles for AC-16 through-24 missions to $25,079,388.

Robert W. Frye, administrator of Convair contracts for Air Force launch vehicles, said negotiations are now under way for three Atlas SLV-3C boosters, including two for the '71 Mariner missions.

Each of the Mariner '71 spacecraft will orbit Mars for at least three months, beginning in November, 1971, following a six-month flight from earth.

Tentative plans are for the first spacecraft to orbit at an inclination of 60 degrees to the Mars equator and examine about 70 per cent of the planet's surface.

The second spacecraft could be placed in a near-polar orbit, inclined 80 degrees to the equator, for high-resolution TV picture coverage of selected areas and examination of the Mars polar cap.

Such an orbit would enable the second spacecraft to obtain oblique views of broad areas of the Mars surface and possibly to examine its moons, Phobos and Deimos.

Launch "payload" weight of the '71 Mariner spacecraft will be about 2,000 pounds, including about 900 pounds of propellants and 1,100 pounds to go into Mars orbit.

Data and photographs from the Mariner '71 spacecraft will aid NASA officials in selecting touchdown sites for the first Mars lander missions, currently scheduled for 1973.

Atlas-Centaur Starts Mariner On Long Trip

Convair division's Atlas-Centaur 20 last week started NASA's Mariner 6 spacecraft on a five-month journey through space that will culminate with photography of the planet Mars.

Officials said the AC-20 (Atlas 5403C and Centaur 17D) performed with such accuracy that the Mariner — without planned midcourse corrections — would come within about 3,000 statute miles of its aiming point after traveling more than 250 million miles through space.

Mariner 6 and Mariner 7, an identical spacecraft to be launched late this month by Atlas-Centaur 19, will fly within about 2,000 miles of Mars in July and August when the "red planet" is 62 million miles from earth.

The spacecraft will have followed long curving trajectories around the sun before flying past Mars. Each of the Mariners will be equipped with wide and narrow-angle TV camera systems for

(Continued on Page 2)

Corporate Engineering Organization Outlined

(In connection with "Engineering Year 1969" within General Dynamics, GD/NEWS from time to time will carry material on various phases of engineering organization. The following article, and all of page 3, deal with the Corporate engineering staff.)

General Dynamics' Corporate engineering department's role and mission are described in the title of its chief, Edward H. Heinemann, vice president — engineering and program development.

"Our organization is divided into six principal functions, each headed by a director," Heinemann explained.

They are Edward L. Ball Jr., director — engineering administration; Warren J. Eding, director — research and advanced program development; Donald A. Mitchell, director — electronics engineering and program development; Samuel O. Perry, director —program analysis; William J. Ruhe, director—marine engineering and program development; Kermit Van Every, director — aerospace engineering and program development.

"Broadly stated, we function to provide perspective, assistance and coordination for the division/subsidiary engineering departments, and therefore are in constant contact not only with them,

(See page 3 for additional material on Corporate engineering staff.)

but also closely monitoring the related technological community, our competitors and our customers," Heinemann continued.

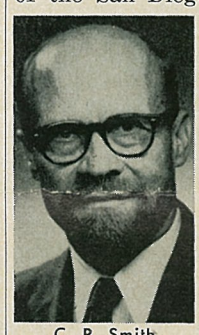
Not only the program efforts in progress but the program potential for the future are under constant scrutiny.

"Function heads were carefully chosen," Heinemann added, "and assigned areas of responsibility for which their talents are particularly fitted."

Chosen both from within and outside the Corporation, the six all have had considerable experience in the "division environment," considered a requisite to appointments to such staff roles.

Engineer Society Honors Smith With '68 Award

A Convair engineer has received the Engineer of the Year Award of the San Diego chapter of the California Society of Professional Engineers.


C. R. Smith

Clarence R. Smith, Dept. 587-0, structures analysis engineer, received an engraved plaque at a National Engineers Week banquet. The award was given for "outstanding performance in the field of professional engineering."

Smith is widely known for his book, "Tips on Fatigue," which has to do with fatigue of metals and structures. A more formal work was formulation of the Linear-Strain Theory for the prediction of linear-strain in metals and the Smith Method for predicting fatigue life.

The Linear-Strain Theory and Smith Method were further developed under Air Force and Navy contract work.

A veteran of 27 years with Convair, Smith is presently working at the General Dynamics Harbor Drive Facility. He is doing consulting work with Standard Pressed Steel of Jenkintown, Pa.

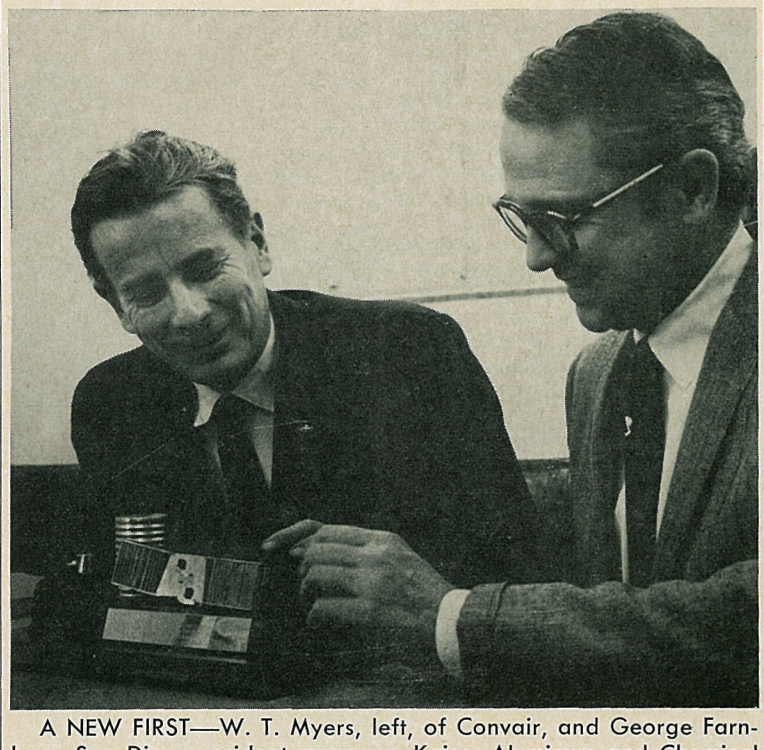
Design of Landing Mat Sealing Merits Kaiser Commendation

Dedicated effort by Convair's William T. Myers, Dept. 531-2, in engineering and development involved in the XM-19 landing mat program has brought an unprecedented personal commendation from Kaiser Aluminum and Chemical Co.

Myers was honored at a dinner in San Diego during which he accepted a plaque lauding his "Outstanding Engineering and Development Contributions."

Myers' efforts centered on design of improved sealing bonds at the mat joints. His aim was to minimize water seepage which can soften earth beneath mats creating uneven landing surfaces.

(Continued on Page 4)


A NEW FIRST—W. T. Myers, left, of Convair, and George Farnham, San Diego resident manager, Kaiser Aluminum and Chemical Co., examine plaque presented to former for landing mat work.

Speed Reading Film Scheduled March 11

Electronics-SD Management Club has scheduled a feature film on "Reading Dynamics," speed reading techniques, at 5 p.m. March 11 in Bldg. 5 engineering auditorium at LF.

Convair club members are also invited.

A representative of Evelyn Wood Reading Dynamic Institute will attend to answer questions.

Members unable to attend but who wish further information should contact Bob Williams, LF ext. 2205 or Jim Taber, LF ext. 1484.

Grant Hansen Appointed Assistant AF Secretary

Grant L. Hansen, Convair vice president-launch vehicle programs since 1965, has been appointed Assistant Secretary of the Air Force — research and development and is assuming his new duties in Washington, D. C. this week.


Grant Hansen

He will be working with Dr. Robert C. Seamans Jr., newly appointed Secretary of the Air Force who formerly served as deputy administrator for NASA in Washington.

"I feel very proud to have been selected by Dr. Seamans, Secretary of Defense Laird and President Nixon for nomination," Hansen said.

"My selection undoubtedly results from the excellent record which has been made by Convair launch vehicle programs. I appreciate the support and encouragement of all those Convair people who have helped make

(Continued on Page 2)

Disneyland Tickets For Party on Sale

The annual General Dynamics family party at Disneyland is scheduled for 8:30 p.m. April 12. The party will last five hours.

Tickets for the Convair Management Club-sponsored party are now on sale at $3.75 per person with children under three admitted free. The admission price will cover unlimited use of all rides and attractions. Parking will be 50 cents per car.

All employes of General Dynamics, their families and guests are eligible to attend.

Special entertainment is scheduled at the Golden Horseshoe, Tomorrowland stage and Coke terrace. There will be reduced dinner prices at the Plaza Inn and special room rates in effect for those wishing to spend the night at the Disneyland Hotel.

Tickets are on sale at all employe services outlets, the CRA Clubhouse and at the following in-plant Convair offices:

Lindbergh Field—Arlene Young, Bldg. 4, ext. 438; Polly Brown, Bldg. 1, ext. 630; Barbara Freeman, Bldg. 5, ext. 1406.

Air Force Plant 19—Dorothy Corrao, Bldg. 4, ext. 2217.

(Continued on Page 2)

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—After 20 years with Convair, I have a complaint. More and more employes are using our company as a marketplace to peddle second-job products and conduct lotteries. Isn't there a policy against this?

A—Yes. Hourly and salaried personnel handbooks summarize offenses that may lead to disciplinary action, including: "Solicitation of employes for donations or membership in organizations, circulation of petitions or other literature, sale of tickets, merchandise, or magazines, etc., on Convair property during working hours without specific approval of the director of industrial relations." Each employe should bring violations to the attention of his supervisor or the chief of security.

★ ★ ★

Q—Are there special regulations on carrying coffee and food in the hallways of Bldg. 33 at Kearny Mesa?

A—Eating foods and drinking beverages in production areas is prohibited, as marked on doorways. During inclement weather, personnel other than production have been permitted to transport coffee and food to their assigned areas. Any spillage should be cleaned up immediately.

★ ★ ★

Q—During the 24 years I've been at Convair, I recall many times when people have been called to have their pictures taken (for service pins, etc.) without advance notification. Why can't 24 hours notice be given?

A—You have a good point. Still photography has been asked to give advance notification, when possible.

★ ★ ★

Q—Could the CRA provide a squeegee for the tennis courts?

A—Yes. Contact the CRA office for one.

★ ★ ★

Q—Would it be possible to have money changers for paper money and change installed near vending machines at the Lindbergh Field plant?

A—Change machines are costly to buy and maintain. Use of change stations at central locations is considered more practical. Phone ext. 1677 LF or ext. 1300 KM for location nearest you.

Log Book Entries

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Feb. 14.

Dept. 027, D. E. Allman, $127.20 (two awards); 015, M. A. Ambrose, $15; 143, A. C. Bailor, $15; 574, R. J. Baldwin, $69.40; 027, R. J. Baldwin, J. Swiatek, $7.50 each (joint award); 780, J. Y. Bessler, $42.30; 144, J. H. Brewer, $35.80; 143, J. D. Clark, $15; 149, P. D. Contreras, $15; 250, K. R. DeArmond, $15; 820, W. G. Doten, $243.80; 019, P. W. Downes, $15; 250, W. Engelke, $20; 401, D. E. Foran, $15; 840, C. W. Glasgow, $15.

Dept. 027, C. F. Hagata, $136.40; 250, E. Jablonski, $20; 015, E. Krupicka, $15; 144, W. J. Kruse, $1,834.90; 454, G. W. Lyst, $15; 831, A. G. McCullough, $965.40; 149, C. A. McKinney, $15; 045, J. F. Montejano, W. Porter, $7.50 each (joint award); 454, J. A. Nagi, $218.40; 810, P. K. Noland, $1,000.00; 836, G. R. Perrington, L. R. Woody, $7.50 each (joint award); 515, E. S. Perry, $185.90; 143, R. R. Reekers, $15; 143, J. L. Sanchez, $15; 027, F. J. Serio, $140.60; 250, W. T. Toon, $377; 460, C. Tyree, $200.50.

Employe Suggestion Awards approved for the week ending Feb. 21.

Dept. 810, E. J. Adamov, $15; 460, F. A. Boyle, $15; 578, H. G. Brittain, $2,466.90 (two awards); 101, J. W. Brown, R. A. McVay, $38.10 each (joint award); 027, L. Castro, $15; 027, R. E. Cloud, $18.70; 027, J. G. DeCara Jr., $57.50; 401, D. C. DeFord, $15; 027, L. A. Edrington, $86.80; 763, S. M. Elson, $15; 985, J. D. Hamner, $50; 832, W. S. Hill, $72.70; 831, V. A. Hoaglund, $146.80; 059, B. M. Ingbretsen, $50.40; 015, W. M. Jefferds, $22.90; 931, A. E. Jones, P. Stachwick, $69.55 each (joint award).

Dept. 015, M. E. Long, $52.20 (two awards); 027, J. Mejia, $58.50; 001, H. G. Mondy, $43; 149, T. W. Heumann, $15; 761, L. L. Ripley, $15; 154, G. A. Rummel, $15; 031, V. H. Schade, $47.60; 454, J. A. Singleton, $15; 149, C. F. Stebbins Jr., $107.80; 250, C. A. Wallace, $15; 149, L. M. Walling, $90; 763, O. L. Wertanen, $15; 019, D. R. Wilson, $108.60; 744, R. A. Wyckoff, $134.50; 031, H. W. Yates, $40; 756, L. T. Zink, $25.

Invention Disclosures

CONVAIR

BROWN—N. J., Dept. 962. Bonded Tube Sleeve.

CHRISTIAN—J. L., Dept. 572. Hybrid A1-B Composite Material.

LYNCH—R. A., Dept. 581. Variable Geometry, Three Element, Reusable Launch Vehicle.

MOORE—R. E., Dept. 550. Notebook Presentation Aid.

MOORE—R. E., Dept. 581. Controlled Buoyancy, Multi-Conductor, Elastic Undersea Cable.

ROGERS—S., Dept. 595, E. R. WOODS, Dept. 550. Matrix Switch with Improved Transmission Characteristics.

SOMERVILLE—A. J., Dept. 507. A Technique for Time Sharing Electrical Signals.

Papers Presented

CONVAIR

Papers presented at the AIAA/7th Aerospace Sciences Symposium, New York, Jan. 20-22.

HARRIS—R. D., R. G. ROSE, Dept. 966-7. "Pneumatic Sensing Line Non Linear Model."

GREENSITE—A. L., Dept. 585. "Synthesis of Closed Loop Time Optimal Control Systems via Threshold Logic Networks."

Rider-Driver

CONVAIR

RIDE WANTED—From 44th St., Talmadge Park to Kearny Mesa plant. 8 a.m. to 4:45 p.m. shift. Call Angelina Velho, ext. 1120 KM or (home) 284-5108.

RIDE WANTED—From East San Diego, 39th and Meade, to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Phone Kay Knoff, ext. 671 or (home) 282-2743.

RIDERS WANTED—From Lakeside, Bostonia, El Cajon areas to Lindbergh Field Plant. 4:30 p.m. to 1 a.m. shift. Phone C. Ross, ext. 552 LF or (home) 443-3592.

Personals

CONVAIR

My children and I wish to thank our many friends at Convair for their kind remembrances and thoughtful help at a most trying time.

O. O. Wahlsten and Family
Dept. 400-3

* * *

Sincere thanks to all my Convair coworkers for their thoughts and kind deeds during my illness.

Catherine R. Spina
Dept. 780-5 (retired)

Deaths

CONVAIR

ANDERSON—Harold L. (retired Sept. 21, 1962), died Jan. 22; survivors include wife, Marie.

DAVIS—Melbourne B. (retired), died Feb. 10; survivors include a son, Gary T.

REIS—Joaquim M. (retired May 13, 1960), died Feb. 4; survivors include wife, Alice.

SALTZGABER—Jay W. (retired July 6, 1959), died Feb. 18; survivors include son, Virgil.

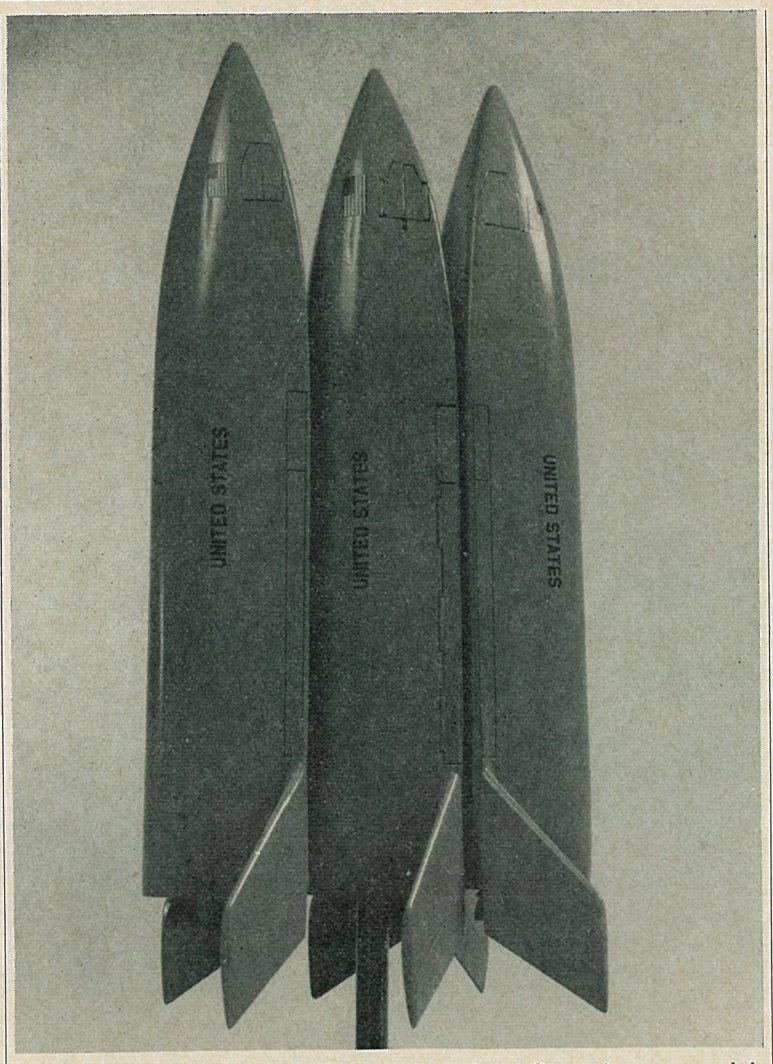
SCHICK—Alva H. (retired Jan. 5, 1959), died Feb. 3; survivors include wife, Rosella.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.



READY FOR LAUNCH—Shown in launch configuration are models of three virtually identical spacecraft, among concepts under study.

'Triplets' Space Concept Included in Studies

A triamese, three-element reusable launch vehicle-spacecraft concept originated by Convair division will be evaluated along with other concepts in a six-month study being conducted by the division under a $300,000 contract from NASA's Marshall Space Flight Center.

The triamese concept envisions use of three virtually identical hydrogen-powered launch vehicle-spacecraft that would function as lifting bodies during re-entry of the atmosphere and extend wings, turbofan aircraft-type engines and landing gear for low-level return, subsonic cruise and landing.

Two of the three elements (called boost elements) would provide fuel for engines of all three during launch, leaving the third, or orbital element with full fuel load for space-shuttle or orbital operations before its return.

The only difference envisioned between elements would be larger fuel tanks in the boost elements in place of cargo and equipment bay space planned in the orbital element.

The triamese could be launched from coastal or inland bases with the boost elements "staging off" after hydrogen fuel depletion, then either cruising back to the launch point or landing at a down-range field.

During hypersonic re-entry of the atmosphere, the hydrogen-oxygen engines used for launch and in-space propulsion would be covered with heat-shield doors.

Multiple use of the triamese elements would eliminate high costs associated with one-use launch vehicles for sending space-shuttle vehicles into orbit.

Other concepts to be evaluated in the NASA integral launch and re-entry vehicle systems study include:

1. New low-cost expendable launch vehicles with reusable manned spacecraft.

2. Reusable first-stage and expendable second-stage launch vehicles with reusable manned spacecraft.

Glenn Karel of Convair's reentry and reusable launch systems Dept. 581-5, the study manager, said each of the proposed reusable space-shuttle vehicles being evaluated would carry 12 men and significant return cargo.

Payloads from 5,000 to 50,000 pounds and 50-degree, 200 to 300-nautical-mile orbit operations are being evaluated.

"Our major emphasis will be on space station logistics, but each of the systems being studied will have considerable mission flexibility," Karel said.

"For example, each of the space-shuttle vehicles being studied would be able to transport weather, communications and navigation satellites to and from low-earth-orbit or transport men and equipment for in-orbit checkout and maintenance of such satellites."

Convair's triamese concept was conceived and developed under the direction of R. A. Nau, manager of maneuverable spacecraft and reusable launch vehicles, and R. A. Lynch, advanced project engineer.

Key personnel assisting Karel on the NASA study include F. E. Jarlett, principal systems analyst; C. P. Plummer, principal configuration designer, and C. E. Crone, principal program analyst.

Disney Tickets Now on Sale

(Continued from Page 1)

Kearny Mesa—Betty Gossett, Bldg. 33, ext. 1861; Frances Osborne, Bldg. 5, ext. 1095; Bernice Romero, Bldg 5, ext. 2648; Shirley Elson, Bldg. 5, ext. 3551; Maxine Emmerick, Bldg. 5, ext. 1843; Mary Davies, Bldg. 5, ext. 3592; Esther Adamov, Bldg. 3, ext. 1071; Norma Buell, Bldg. 1, ext. 3778; Mary White, Bldg. 4, ext. 3187; Colleen Woodrum, Bldg. 26, ext. 1641 and Alix Markam, Bldg. 33, ext. 2805.

Tickets at other General Dynamics locations are available at the following offices:

Edwards Air Force Base (Ft. Worth Division), Larry Failor, 277-3001; Marine Technology Center, Jean O'Connor, ext. 1641 LF; Electronics-S.D., Milly Buffat, ext. 1757 LF; L.A. Material Office (Convair Division) Pat Hart, ext. 202; Stromberg DatagraphiX, Jack Swank, 442-5541, ext. 450; Sycamore Test Site, A. T. Seemann, 277-7690; Vandenberg Air Force Base (WTR), M. Tooley, Station 33.

Bus service from San Diego will be provided for those not wishing to drive. Round-trip tickets will be $3.50. Buses will load at 5:30 p.m. at the main entrance to the Kearny Mesa plant.

Planning committee chairman Don Evanson said all tickets must be purchased in advance. No tickets are sold at the gate.

Atlas-Centaur Starts Mariner On Long Trip

(Continued from Page 1)

photography.

AC-20 lifted off Complex 36B at Cape Kennedy at 5:29 p.m. (San Diego time) Feb. 24. Atlas booster and sustainer engines powered the first 4½ minutes of flight. After Atlas and Centaur separation, the Centaur's liquid hydrogen engines burned 7.38 minutes to send the Mariner on its flight trajectory.

Mariner 6 was separated from the Centaur 13.67 minutes after launch and the Centaur was turned and its orbit changed through firing of remaining propellants to place it in solar orbit and insure it could not impact Mars.

Convair division officials at Cape Kennedy for the launch included Jack L. Bowers, Convair general manager; Andrew Kalitinsky, launch vehicle programs engineering director; Deane Davis, Centaur program manager; Walt Hicks, AC-20 program office engineer; W. J. Hammond, site integration and procedures engineer; A. B. Yanke, flight test group engineer.

Daniel Sarokon was launch conductor with D. J. Merritt assistant for guidance and control, J. L. Johnson for instrumentation, J. M. Sylvester for electrical systems, and J. M. Kechele for mechanical systems.

Mariner 6 is scheduled to make an equatorial pass over the Mars surface July 30, with Mariner 7 passing over the planet's polar regions about five days later.

Mariner '69 mission objectives are to study the surface and atmosphere of Mars to establish a basis for future experiments in the search for extra-terrestrial life and to develop technology for future Mars missions.

Atlas-Centaur 19 (Atlas 5105C and Centaur 16D) was erected last week at Complex 36A at the Cape. The Mariner 7 spacecraft will be mated about the middle of the month.

Convair is to have a "tiger team" from Kearny Mesa at the Cape for AC-19 equipment assessment and flight readiness review next weekend.

Grant Hansen AF Asst. Secy.

(Continued from Page 1)

this great honor possible."

Hansen said he was particularly pleased with the excellent result of the Atlas-Centaur 20 launch of Mariner 6 last week for Mars flyby. The flight marked the 44th consecutive successful Atlas space vehicle launch.

Convair's Centaur high-energy hydrogen-fueled upper-stage vehicle was developed for NASA under Hansen's management as vice president and became operational in Project Surveyor, where it achieved a perfect record in seven missions.

"I regret leaving the San Diego area and my many good friends at Convair," Hansen said, "but I look forward to the challenges and opportunities in my new position."

Hansen will be responsible for Air Force plans, policies, and programs relating to scientific and technical matters and basic and applied research.

Included will be responsibility for research, development, testing and evaluation of weapons systems and defense materials, and for technical management of systems engineering and integration.

Hansen joined Convair in 1960 as chief design engineer, was appointed vice president and program director for Centaur in 1962, and became vice president-launch vehicle programs in 1965.

Jack L. Bowers, Convair general manager, has assumed responsibility for launch vehicle programs on an interim basis and will be assisted by Andrew Kalitinsky, director of launch vehicle engineering.

Corp. Engineering Organization

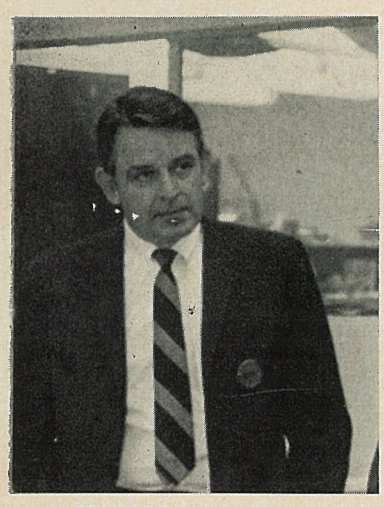
Edward H. Heinemann, Corporate vice president-engineering and program planning.

	K. E. VAN EVERY ⬇ AEROSPACE (Convair, Canadair Pomona, Fort Worth)	D. A. MITCHELL ⬇ ELECTRONIC (DatagraphiX, Electronics Stromberg-Carlson)	W. J. RUHE ⬇ MARINE (Electric Boat Quincy)
E. L. BALL ➡	Management and Administration		
S. O. PERRY ➡	Concept Analysis and Formulation		
W. J. EDING ➡	Technology and Long Range Plans		

An Introduction

The New York Engineering Staff

★ ★ ★



EDWARD L. BALL JR.

Ball 'Alumnus' Of Fort Worth

Edward L. Ball Jr. learned how to use engineering drawings early in life.

"I grew up in a machine shop my father owned in Denver and was a fair machinist by the time I finished high school," Ball remembers.

He also was (and is) a talented artist and won summer art scholarships in statewide competition.

The Marine Corps interrupted Ball's academic career and he was overseas as a combat engineer and rifleman in the Pacific Theater most of 1943-46, participating in the invasion of Guam, Okinawa and the Philippines, climaxed by occupation duty in North China. After he returned to the states he completed his degree work at the University of Denver (where he took ROTC) and completed graduate study at University of Colorado. Incidentally, the ROTC experience led to an Army commission and a two-year hitch in 1951-53 as an instructor in infantry weapons and tactics.

Ball entered industry via the material department of Hathaway Instrument division of Hamilton Watch Co. where he later became engineering assistant to the division president. He joined General Dynamics in 1955 in the mechanical design section of Fort Worth division, transferring to the Corporate staff in 1966.

Ball's father-in-law is Don Ransom, now retired from Fort Worth division.

Ball's Corporate duties include monitoring new division management and administrative techniques with a view to application at other divisions, overseeing proposal and program efforts as they impact engineering resources and capability, while keeping an eye on techniques of systems engineering, program management, engineering information systems, configuration and data management as they relate to GD engineering management efforts and DOD requirements.

Perry Recalls Gov't. Years

Of the Corporate engineering staff, Samuel O. Perry has had the most experience as a civilian on the government side of the "aisle."

"Those were exciting years," Perry recalls, looking back on his 1962-65 stint as assistant director of Combat Systems in the Office of the Secretary of Defense.

"It was in the early Kennedy days and we were all rather charged up."

No newcomer to the military (Army Air Corps pilot and aircraft project engineer—1943-46—at what was then Wright AFB) Perry's civilian career before joining General Dynamics was with Chance Vought and LTV, ultimately as top man on the Navy's Regulus missile program. In fact, as test conductor he fired the first missile. He left LTV for the Pentagon.

"One gets a new perspective when he crosses the line between industry and government. One thing I learned, there are dedicated pros on both sides."

Lanky and soft spoken—even taciturn—Perry doesn't volunteer much information except on the subject of his family, and there's plenty to talk about. His oldest son is a medical doctor, on Navy duty in Scotland; a daughter, 20, is a teacher in Appalachia and will receive her master's this year! (She finished high school a year early and took only three years to earn a college bachelor's degree).

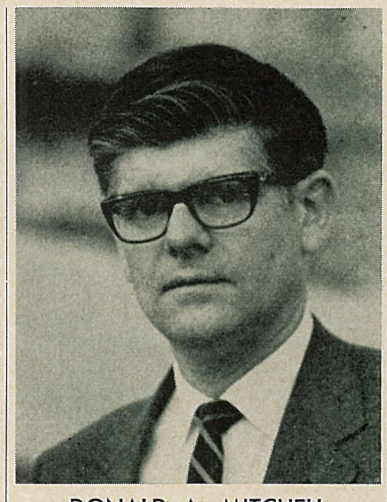
Another daughter, 14, is an accomplished skier, and there are identical twin boys, 4.

"The boys are a handful. One is very active and outgoing, the other quiet and thoughtful. In fact, that's how we tell them apart."

A 1941 graduate of Middlebury College (BS, physics), Perry is a native of Wilton, Conn.



SAMUEL O. PERRY



DONALD A. MITCHELL

Mitchell Both Navy and AF

More widely traveled than any other member of the Corporate engineering staff, Donald A. Mitchell was born in India (the son of an American educator), reared in Japan, has lived in England and traveled throughout Europe.

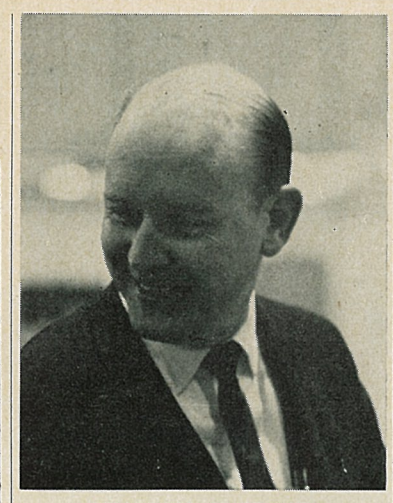
A graduate of the University of Maine, he received his MBA from Harvard and has served two military duty tours, one with the Navy as fire control instructor during WWII and in the Air Force during the Korean conflict as an electronics maintenance officer on the "Pine Tree Line" at Loring AFB, Maine.

Mitchell began his professional career with Westinghouse Electric as a design and development engineer and spent 10 years with Raytheon as assistant to the vice president-engineering; director of planning; director of Raytheon International. His last position was assistant general manager of Raytheon Service Co. For a five year period he devoted evening hours to teaching advanced marketing and business policy at Northeastern University Graduate School of Business, Boston.

He joined General Dynamics in 1965 and is the director of electronic programs on the Corporate engineering staff, contributing heavily to advance product planning and proposal and program efforts. He currently is assisting with review and assessment of programs such as Micro Tacan, Autodin and AGE and in evaluation of future Corporate plans in the advanced electronic technology fields.

The Mitchells have three children, live in Darien, Conn. where he is a director of the Middlesex Swimming and Tennis Club. However, Mitchell is often at sea on his 23-foot Ensign-class sailboat or crewing for deep-ocean racers out of Maine.

Mitchell usually takes part of his vacation in the wintertime when there is deep powder for skiing in New York and Vermont.



WARREN J. EDING

Eding Building 'X' Amphibian

A man of many mechanical interests is Warren J. Eding, Corporate director of research and advanced program development.

He owns a Beech Debonair, is building a two-place single-engine amphibious experimental plane in his leisure time (which is rather limited), has rebuilt antique cars and has built several custom sports cars from the ground up.

"I got interested in flying in high school in Holland, Mich.," Eding recalls, "Ultimately I picked up a multi-engine instrument ticket and I've flown about every kind of light plane there is, as well as many different multi-engine and amphibious aircraft."

An aviation torpedoman in the Navy, 1944-46, Eding holds degrees from Michigan State and Princeton in mechanical, metallurgical and aeronautical engineering. He joined General Dynamics at Convair division in 1954 and worked as a thermodynamics, metallurgical and aeronautical engineer. He spent three years in Washington, D. C. with the National Academy of Sciences' materials advisory board but rejoined the Corporation in 1962.

Eding's duties on the Corporate level involve coordination of engineering long-range planning, reviewing, planning and coordinating company-funded research programs and identifying technology trends and requirements. Further, he works with divisions and field offices to assign bid responsibility on new requests for proposals from the Government.

Ruhe Recalls Long Sea Duty

Uniquely qualified to head up marine engineering on the Corporate level, William J. Ruhe followed the sea for 33 years as a naval officer.

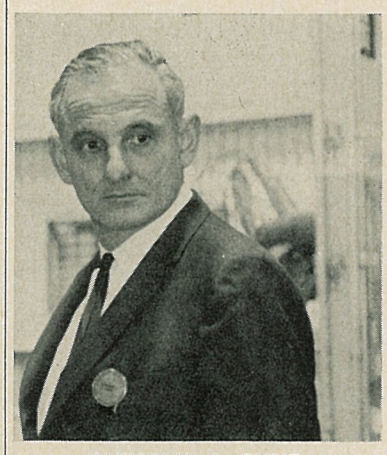
A Naval Academy graduate, Ruhe rounded out his military career as deputy director of program planning in the Office of the Chief of Naval Operations and served on the staff of the President's Commission for Marine Science, Engineering and Resources.

"I spent most of the war years in submarines and later commanded destroyers and cruisers," he reports.

For gallantry during that time he earned three Silver Star medals.

Ruhe has a lifelong interest in athletics, dating back to Annapolis where he participated in lacrosse, swimming, football and boxing. He later was on "All Navy" tennis and badminton teams.

The Ruhes have six children, two of them pursuing Navy careers, one as a helicopter pilot and the other awaiting assignment as a gunboat officer in Viet Nam.



WILLIAM J. RUHE

The Navy gave Ruhe a broad background in program planning, systems analysis, long-range strategic planning and personnel management, all valuable in helping General Dynamics develop new marine technology markets. He spends considerable time in Washington, D.C. to maintain close liaison with present and potential customers.

With developing ocean activity promising radically new markets and complex systems, Ruhe will assist in shaping division R&D programs to meet new requirements.

Van Every a Two-Time Winner Of Wright Brothers Medal

K. E. Van Every has the distinction of having twice won the prized Society of Automotive Engineers' Wright Brothers Medal for the best technical paper in aeronautics, the first time in 1948 and the second ten years later.

A native Californian, Van Every completed both undergraduate and graduate studies at Stanford and spent a number of years with Douglas and Northrop before joining General Dynamics. While at Douglas he served as chief aerodynamicist and later had engineering management responsibilities for the Santa Monica, El Segundo and Long Beach facilities.



KERMIT E. VAN EVERY

During a leave of absence in 1953 he spent three months in Paris on an assignment with NATO's Advanced Group for Aeronautical Research and Development.

Just prior to joining GD in 1965 he was program manager for the X-21 flight test research plane and for NASA's M-2 and HL-10 lifting body re-entry vehicles at Norair division of Northrop.

In his capacity as Corporate director of aerospace engineering and program development, Van Every spends considerable time on division proposal and program review, particularly in analysis and evaluation of technical approaches. His wide professional experience contributes to resolving technical problems on a variety of programs. His most recent activities have included review and assistance on the VS(X) (now S-3A) proposal, consultation and assistance on F-111, CL-84 and CL-215 programs, advanced study and analysis of STOL and VTOL aircraft and in reviewing aerospace research, development and new business plans.

Van Every lives in New York City, though like other staff members he travels widely among divisions. Affable and pleasant to talk with, he is an enthusiastic fisherman, except that he doesn't often have time to indulge.



SUGGESTION PAY—W. J. Kruse, right, Convair Dept. 144-2 outside inspection representative, receives $1,834.90 Employe Suggestion award check, certificate and congratulations from R. S. Campbell, left, manager of procurement reliability control, and E. C. Gordon, supervisor of procurement quality verification.

Outside Inspection Rep. Awarded $1,834 For Vendor Firm Change

W. J. Kruse, a Convair Dept. 144-2 outside inspection representative in the Los Angeles area, has been presented a $1,834.90 Employe Suggestion award for suggesting a change in a vendor firm's operations that will save the division 10 times that amount during the next year.

Kruse found that a vendor firm producing detail parts for Convair for F-111 aircraft pivot pylon support assemblies could, through use of trace templates, produce two details from steel-block stock being provided for one.

The suggestion eliminated material waste, resulted in savings by eliminating cost for material procurement, and was implemented by the vendor with no additional labor cost.

R. S. Campbell, manager of procurement reliability control for Convair, presented the award check and certificate to Kruse in ceremonies Feb. 19 at the Kearny Mesa plant.

E. C. Gordon, supervisor of procurement quality verification for the Los Angeles area, said outside inspection representatives are encouraged to try to find such cost saving opportunities during the course of their procurement verification planning and inspection activities.

"Our outside inspectors, instead of waiting until a vendor firm builds parts for inspection, plans ahead and works with the vendor and his production personnel to see that quality will be "built-in" to each part as it is produced," he said. "We all benefit from the results."

Design of Mat Earns Award From Kaiser

(Continued from Page 1)

Sealing first attempted with membrane and caulking substances had limited results. Myers finally developed neoprene seals and the new bonded mat was tested by the Army with excellent results.

All mat production will now incorporate the rubber sealing technique. Kaiser, prime contractor for the mats, sponsored design and development of sealing efforts.

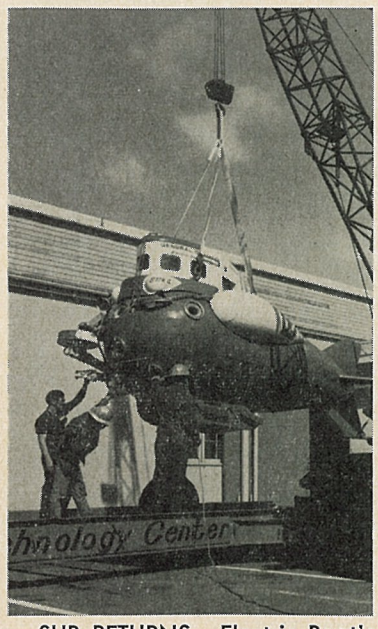
Convair originated the landing mat program in 1961. Following development and installation of a sophisticated automation system, including a high speed automatic welder, 9 million square feet of mats were produced for the U.S. Army. Many are now in use in Viet Nam.

Bids Are Solicited On Willys Truck

Convair salvage offices are accepting bids for sale of a 1955 Willys four - wheel - drive pickup truck with radio and heater. Bids may be obtained from the salvage office at Kearny Mesa, ext. 1873, or Lindbergh Field, ext. 1609, and must be returned before 1:30 p.m. March 11.

Two-Man Research Submarine To Operate From San Diego

Electric Boat's two-man research submarine STAR II returned this month to the Marine Technology Center in San Diego.



SUB RETURNS—Electric Boat's STAR II is unloaded at Marine Technology Center, San Diego. Sub has been stationed at Santa Barbara, Calif. since June 1968 performing tasks for Navy and petroleum companies.

Stationed at Santa Barbara, Calif. since June 1968 the sub has been operating for both the Navy and petroleum drilling companies.

Capable of diving to 1,200 foot depths, the ship will operate locally to develop advanced techniques and tools for use in continued research and exploration of ocean areas.

While in Santa Barbara the sub made the first significant manual labor task by a diving ship in California's off-shore oil fields by guiding the recovery of 10,000 lbs. of marine riser pipe from the ocean floor at a 575-foot depth. She later boosted her weight record by directing the recovery of 40,000 lbs. of blow-out preventer stack from 530 feet.

STAR II also acted as prime search and recovery ship for the "Nimbus" weather satellite lost in the Santa Barbara channel last year.

Assigned to the General Dynamics program in San Diego, the submarine is capable of underwater work anywhere in the world.

Six Recognized For Film Work

Six General Dynamics representatives recently were awarded "Certificates of Merit" from Industrial Photography magazine for their work on "On Track," a Convair-produced documentary film on the three Apollo Instrumentation Ships (AIS).

L. Ferris Bell of Electronics-SD, AIS satellite communications program manager, and Louis Emmerich, manager of manufacturing for Quincy division, each received certificates for serving as technical advisers.

Convair personnel receiving the awards and their duties were Robert Montague, producer-director; Bill Woods, editor; Betty Miller, final script; Bill Carter, cinematography.

"On Track" was produced by Convair for Electronics division and describes the mission, equipment and operations of the Apollo Instrumentation Ships in the Atlantic, Indian and Pacific oceans.

Convair's motion pictures and television department also received an Industrial Film Award plaque for the production.

Educational Services Shifts Hdq. to LF

Convair educational services, Dept. 130-3 headquarters, has been moved from Kearny Mesa to the second floor of Bldg. 15 at Lindbergh Field. The Mail Zone, 130-30, remains unchanged. The new telephone extension is 2564 LF.

Jack Croft, chief of educational services, said an office is still being maintained in Bldg. 17 at Kearny Mesa for convenience of employes and is being staffed by Jim Watt, an education specialist. Watt can be reached on ext. 1471 KM.

Educational literature, tuition refund forms, and audio-visual equipment will be available at both locations.

Con-Trib Approves $16,676 in Grants

Grants totaling $16,676 were approved by the Convair Employes Con-Trib-Club committee in its Feb. 20 meeting.

Included was $10,000 for the San Diego County Heart Association for its heart patient discharge program and a mimeograph; $4,426 for the Lutheran Association for Retarded Children's Home of Guiding Hands for construction of a storage building; $1,250 for the Planned Parenthood Association of San Diego County for operating expenses, and $1,000 for the Mayor's Committee on Youth Opportunity for its camp counselor training project.

Montague, DeMund Hold Film Office

Two from Convair motion pictures and television Dept. 516-0 have been elected to national offices in professional non-theatrical film makers' organizations.

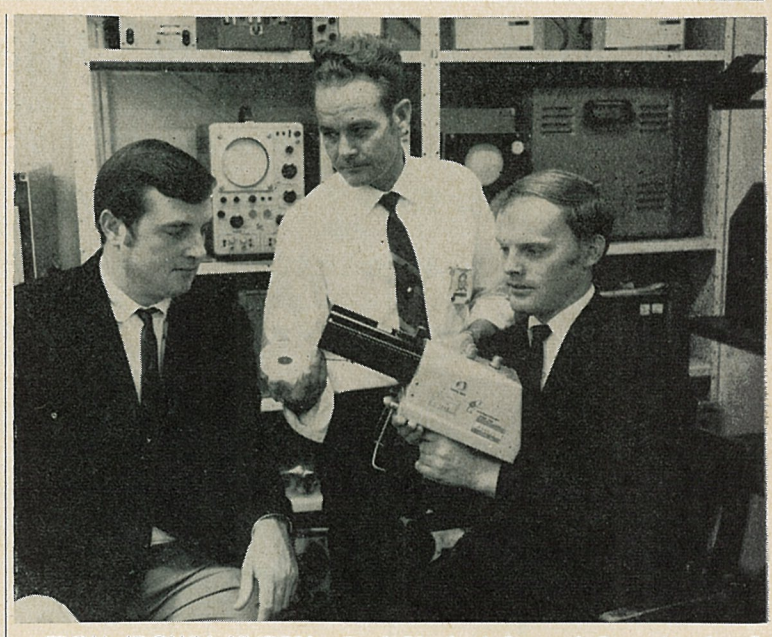
Robert B. Montague, chief of motion pictures and television, is vice president-western states and serves on the board of directors of the Information Film Producers of America.

Charles N. DeMund, a Dept. 516-0 director - cameraman, has been appointed vice president-symposia and seminars and serves on the board of governors of the Society of Photo-Optical Instrumentation Engineers.

SAWE Members View DC-10 Mockup on Tour

Convair members of the Society of Aeronautical Weight Engineers recently toured the DC-10 mockup at McDonnell-Douglas' Long Beach plant.

The 40 members and their wives later saw a film on the giant tri-jetliner before joining members of the Los Angeles Chapter for a dinner meeting.



FROM 'DOWN UNDER'—Paul Block, left, and Ross MacLeod, right, both of Qantas Airlines in Australia, discuss geiger counter operation with Ed Martindale of Convair. Block and MacLeod were students in three-week Convair non-destructive testing school.

Students in Non-Destruct Course Include Two From Australia

Two Qantas Airlines representatives from Sydney, Australia, were among 14 students completing the second of six three-week non-destructive testing courses at Convair.

Ross MacLeod, a Qantas structural engineer, and Paul Block, a surveillance inspector, termed the course "excellent for our purposes." Both travel extensively with the airline but were in San Diego for the first time to attend the Convair course.

Each of the courses scheduled monthly through June by Convair's NDT Training School will include classroom and laboratory training on applications and limitations of radiographic, eddy current, and ultrasonic testing.

R. H. Gilliland, manager of reliability control at Lindbergh Field, was guest speaker and presented certificates.

Receiving certificates, in addition to MacLeod and Block, were Bobby J. Dickinson, J. W. Winston and J. R. Bannister, all of the Federal Aviation Administration; Donald G. Treese of Allegheny Airlines; Harvey Hedges of Electronics-SD; Donald L. Duncan and Al Gregg of Fort Worth division; Wayne Gross of Pomona division; Dale Kuhlman, E. J. Yannaccone, John Schwab and Bernard Moore of Convair.

Technician Winner Of Trip to Vegas

Joe Molter, calibration technician in Convair's Dept. 142-1, recently won a three-day all-expenses-paid trip for two to Las Vegas and a hi-fi set in a Universal Sewing Machine Co. contest.

"All I did was open a letter I received in the mail, pulled a tab and found I had hit the 'jackpot,'" Molter said. "It was the first time I had ever won anything in my life."



LARGEST SALMON—CRA Fishing club angler Mrs. Viola Davidson shows 50 lb. 4 oz. King Salmon she caught near California-Oregon border in Smith River using 12 lb. line, 10 lb. leader. She won award from Southwest Anglers Button Award Association for largest salmon caught in 1968.

HERE ARE YOUR REPRESENTATIVES

An important part of democratic government is the privilege of voters' making their opinions known by writing to representatives in Congress.

U.S. SENATORS

Sen. Alan Cranston — Senate Office Building, Washington, D.C. 20510.

Sen. George Murphy — Senate Office Building, Washington, D.C. 20510.

U.S. REPRESENTATIVES

35th District — Rep. James B. Utt, House Office Building, Washington, D.C. 20515.

36th District — Rep. Bob Wilson, 2235 Rayburn Building, Wahsington, D.C. 20515.

37th District — Rep. Lionel Van Deerlin, House Office Building, Washington, D.C. 20515.

Fishing Club Elects Browning President

New officers for the CRA Fishing Club are: Robert Browning, president; Phillip Poche, vice president; Virginia Lopez, secretary; Linda Sharp, treasurer.

Browning announced that membership fees are due for 1969-70.

SIMULATOR SET FOR TV SHOWING

Convair's six-degrees-of-freedom simulator will be shown on the "That Girl" ABC television program at 8 p.m. tomorrow (March 6) on Channel 6. Marlo Thomas stars in the series.

Funding Increased For Standard ARM

Pomona division of General Dynamics last month received approval of $7,125,000 in added funding on an existing development contract for Standard ARM (anti-radiation missile).

Standard ARM, an air-to-ground version of the Navy's ship-to-air Standard Missile, is air-launched and homes on radiation emitted by ground radar.

Development started in 1966 and General Dynamics received a production go-ahead in February, 1967.

Table Tennis Tourney Slated For March 15 at Clubhouse

CRA's second table tennis tournament will begin at 11 a.m., March 15 in the CRA Clubhouse auditorium at Kearny Mesa. Contestants may register between 10:30 and 11. Trophies will be awarded winners and runners-up in A and B men's singles divisions.

Trophy winners in the first tournament Feb. 15 were Les Craig of Dept. 832-2, class A winner; C. W. Leonard, Dept. 551-4, class B winner; A. L. Jenkins, Dept. 554-0, class A runner-up, and P. E. Marenholz, Dept. 843-1, class B runner-up.

Patti Martinez, 17-year-old U.S. and Canadian women's table tennis champ, and her brother, Raymond, 13, amazed spectators with a demonstration before the CRA tournament began.

The Martinez youngsters also took on all challengers, adult and youth alike, and won game after game giving their opponents 12 or 14 points to start.

Tables are set up in the Clubhouse auditorium each Saturday for open table tennis play. Employes and dependents may enter the March 15 tournament.

Private Pilot Ground School Course Offered by CRA Flyers

A private pilot ground school course will be given by the CRA Bonair Flyers beginning April 11.

The course, lasting 11 weeks, is designed to train persons to pass the private pilot written exam, one of the FAA requirements for a private pilot license.

Classes are open to Convair employes, families and special guests. There is no charge and no age limit. Previous experience is not required. High school students are especially urged to attend, according to Commissioner Red Taylor.

Supplies, such as textbooks, will be offered to students at cost. Time-distance devices were donated by Standard Oil.

There will be an opportunity to take a brief flight during the course and flight instructors will be available through the club, at a small fee, for those wishing instruction.

For information call Jim Moody, ext. 1695 LF; Steve Adams, ext. 1223 LF or George Hazelrigg, ext. 3368 KM. Information is also available at regular CRA Bonair Flyers meetings.

Underbrush, 595 Tied With 5-1

Underbrush and 595 completed the first half of CRA fast-break basketball play last week with identical 5-1 records. Underbrush, with Ron Eckberg as manager and two consecutive fast-break plant championships to its record, and 595, led by Terry Nicita, will have a one-game playoff at the end of the season to determine first half winner.

Other teams in the league and their win loss records are: Plastics, 4-2; GD/E Bombers, 3-3; Aero, 2-4; Cosmo Bums, 1-5, and Flight Control, 1-5.

The Bombers outpointed the Plastics by a close four points Feb. 19 to knock Plastics out of a three-way tie for first. Pete Beyrer, CRA basketball leagues manager, said teams in this year's fast-break league are the most evenly matched he has ever seen.

Slow-break league first half season winner was the Underdogs with seven straight wins and no losses. Other teams and standings were Stromberg DatagraphiX, 6-1; GASP, 4-3; Spoilers, 4-3; Bullets, 2-5; Stromberg Supporters, 1-6, and Patton's Pros, 1-6.

Underdogs defeated Stromberg DatagraphiX 30-24 Feb. 24 to take the first-half season win.

Europe Tour Group To Discuss Itinerary

Itinerary for a CRA-sponsored 22-day European tour will be discussed in a meeting at 7:30 p.m. March 19 in the CRA Clubhouse. The tour group will leave May 17. Cost will be $839 per person.

WOMEN GOLFERS ASSIST IN TOURNEY

Three members of the Women's Golf Club, Kathy Mix, Flo Kell and Mabel Dunn, assisted during the Andy Williams Open Golf, keeping scores, selling programs, etc.

'Mickey Mouse' Golf Set for Saturday

The ninth Annual "Mickey Mouse" golf tournament sponsored by the Convair Management Club will be Saturday, March 8 at the Torrey Pines South Course.

There will be a 6:30 a.m. shotgun start. The $5 entry fee will include greens fee, free beer and snacks, prizes and special events. Tournament director is Terry Kell, Dept. 400-10. For information call ext. 1900 LF.

Discounts Offered On Sports Tickets

Reduced-price tickets for several upcoming sports and theater events are on sale at all employe services outlets.

Tickets for the Figure Skating Championships on March 9 at International Sports Arena are on sale at $4 and $2 each (a $1 saving).

Rockets vs. Detroit tickets for the 7 p.m. March 16 basketball game, also in the sports arena, are $3 (a $1 saving).

Gulls vs. Portland tickets for the 7 p.m. March 30 hockey game in the sports arena are $2.75 (a 75-cent saving).

Tickets for "Thieves' Carnival" at Circle Arts for the 8:30 p.m. March 13 showing are $2 (a $1.50 saving).

'Seashores' Subject For Photo Contest

Winners in CRA Camera Club's latest contest are: Black and White—Advanced class, Bob Jenkins, Erich Wolf and Jim Mildice; Beginners class, Bill Pain and Bob Pettyjohn; Slides — Advanced, Mary Ann Wolf, Clark Winsor and Ken Rinker; Beginners, Ken Carlson, Leo Springer and Sharon Williams.

Next shooting assignment is "San Diego Seashores."

Rockhound Club's Shop Is Relocated

The Rockhound Club's shop at Kearny Mesa was closed late last month.

A new facility, located in Western Town section of Missile Park, will open in approximately six weeks after all equipment is relocated.

The Gillespie Field shop continues to operate on Thursday evenings.

Mission Bay Ride Ahead For Cyclists

Members of the CRA Bicycle Club will ride a 25 mile course around Mission Bay Saturday, March 8.

Members will meet at 9 a.m. at the parking lot of the Hilton Inn. Members have been requested to carry a light lunch.

Ride leader is Myke Dickey, ext. 1551 KM or 279-2442.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



PRO-AM—Pete Williamson proudly displays the silver platter, punch bowl, cups and ladle that he won as a member of the winning amateur team in the Andy Williams San Diego Open Pro-Am golf tournament.

Pete Williamson's Team Wins Amateur Event in SD Open

A Convair engineer paced his team to victory in the recent Andy Williams San Diego Open Pro-Am Tournament.

Pete Williamson, Dept. 551-1, contributed four net eagles and ten net birds to the 28 under par victory total of his team in two days of play at the Torrey Pines Golf Course.

The amateur team, consisting of Williamson, Neil Clarke of Chino, Calif., and Gordan Van der Boom of Glendale had a team score of 55 on the first day of play, 17 under par, and 61 on the second day of play, 11 under par, for a net team total of 116. This was six strokes under their nearest competitor.

Williamson won his entry fee for the tournament in the 1968 CRA Golf Club championships.

For the par-busting rout of the other amateur teams, all three members of the team received an engraved silver tray, punch bowl, 12 matching cups and a ladle along with a gold money clip engraved "Winner Pro-Am, 1969."

Playing with Williamson and his team were pros Dave Gumlia who joined the threesome on the first day on the Torrey Pines North course and Dave Stockton who joined the team on the second day on the Torrey Pines South course.

Novices Instructed In Pistol Shooting

First session of a beginning pistol training class was held last month by CRA Pistol Club with Jim Halfacre, Don O'Brien, Harry Black and Warren Walker as instructors.

First students included Harvey and Mary Seibert, T. A. Edwards, C. V. Beeson, Charles Kropp, Richard Schuh, Bud and Ruth Robinson and Marilyn Smith.

Sessions are held at the Police Pistol Range. The next will be 10:30 a.m. March 9.

SQUARE DANCERS WILL BE ON TV

A taped program featuring the CRA Square Dancers will be shown on Channel 39 on March 6.

Special Vegas Trip Slated March 28-30

CRA will sponsor a Las Vegas tour March 28-30 with participants spending two nights at the Westward Ho hotel and having meals at the Thunderbird.

March 24 will be deadline for reservations. Cost including round-trip bus transportation will be $35, based on double room occupancy, plus $9.50 for an optional "Lido Tout Paris" midnight show at the Stardust hotel.

The tour bus will leave CRA Clubhouse at 5:15 p.m. March 28 and leave Las Vegas at 2 p.m. March 30.

Phone Inez Schurr, ext. 1111 KM, or Vonda Hoffman, ext. 1931 LF to make reservations.

Brothers to Exhibit At '69 Science Fair

Andy and Neil Sturman, sons of Convair's Max Sturman, Dept. 195-8, were selected recently to exhibit in the 15th Annual Greater San Diego Science Fair at Balboa Park, April 10-13.

A 17-year-old Madison High senior, this is Andy's fourth such honor for his science displays. His 1969 entry is titled "A Study of Joule Magnetostriction in Ferromagnetic Materials," a device used to measure size changes in magnetized metals.

Fifteen-year-old Neil, a Madison High junior, will show his exhibit, "Viscosity vs. Concentration in a Viscous Liquid Reaction."

Andy's 1968 exhibit, dealing with a single side band radio, won both the Navy Cruiser and USAF awards at the Fair.

Black and Sutton Win .22 Competition

CRA pistol shooters Harry Black and Dick Sutton won .22 police course competition with Don O'Brien topping the Center Fire (optional .38 or .45 cal.) match at Police Pistol Range Feb. 23.

Black won among Masters with a score of 292-5x and Sutton shot 271-6x to top Expert Class while O'Brien turned in a 276 tally.

Other shooters placing were: Masters—Roland Schneider 288-9x, second; Center Fire—Warren Walker 255, second, Schneider 246, third and Charles Kropp 241, fourth; Expert—Bill Worthington 264-5x, second.

Next match is March 9 at 9 a.m., police range.

Salvage Schedule

Next employes sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, March 29. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is March 11. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meeting March 19, 7:30 p.m.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—25-mile Mission Bay ride, March 8. Meet 9 a.m., Hilton Inn parking lot.

BONAIR FLYERS—Meeting March 6, 7:30 p.m. Pilot ground school course starts April 11.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting March 16, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet each Tuesday and Thursday, 7-10 p.m.

CHORUS—Rehearsals 7:30 p.m., Wednesdays.

COINEERS—Meeting March 10, 8 p.m.

DELTA DIVERS—Meeting March 12, 7:30 p.m.

FENCING—Workouts and instruction Friday, 7:30-10:30 p.m., YWCA, 10th and C Sts.

FISHING CLUB—Meeting March 18, Gillespie Field Clubhouse. Potluck 6:30; meeting 7:30 p.m.

GARDEN CLUB—Meeting tonight (March 5), 7:30 p.m., Floral Association Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Friday, 10 a.m. to 5 p.m., Saturdays.

HI-FI MUSIC—Meeting March 25, 7 p.m., Fox Theatre.

ICE SKATING—GD family skate nights Thursday, 6:30-8 p.m. Mission Valley Ice Arena.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot March 9, 9 a.m., S.D. Police Pistol Range. Training class offered at 10:30 a.m.

RADIO CLUB—Meeting March 6, 7:30 p.m.

RIDING CLUB—Meeting March 12, 7:30 p.m.

RIFLE CLUB—Senior shoot March 12, 7:30 p.m., Junior shoot March 15, 1 p.m., Gillespie Field Range.

ROCKHOUNDS—Meeting March 12, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB—Meeting March 12, 7:30 p.m., Convair executive dining room, Lindbergh Field.

STAMP CLUB—Meeting March 13, 7 p.m.

TABLE TENNIS—Tournament, March 15, 11 a.m. (Registration at 10:30).

TOASTMASTERS — Applications for new members now being accepted. Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS—Hawaiian tour March 29-April 5. European tour, May 17-June 7. Tour itinerary meeting March 19, 7:30 p.m.

TROPICAL FISH—Meeting and Workshop, March 17, 7:30 p.m.

Ariz. Slide Program Scheduled March 12

A slide program entitled "Hubbing" will be presented at the March 12 Rockhound Club meeting in the CRA auditorium.

The 7:30 p.m. showing presented by George (Dept. 149-0) and Virginia Forbes will feature Flagstaff, Ariz. as the "hub" and branch out to other attractions in the state.

CRA Sailing Entry Wins Butler Trophy

Three boats from CRA Sailing Club came from behind to beat a Torrey Pines (Gulf Atomic) trio in the three-heat 1969 Butler Trophy race, 60¾ to 57 last month.

CRA boats were skippered by Tom Logue, Neil Martin and Norm Reed.

Toastmasters Club Sponsors Student

Convair Toastmasters Club 3745 sponsored Marc Sebrechts of University High School in a Toastmasters' area high school speech tournament Feb. 17 in Escondido.

Club 3745 meets at 4:30 p.m. Wednesdays in Room C of the CRA Clubhouse at Kearny Mesa. Prospective members are invited.

Wives Club to Name Officers For Year

The regular monthly luncheon and business meeting of the Convair Wives Club will be at noon March 19 at the Sands Restaurant.

Hostesses for the $2.60 buffet are Annette Blust and Lucille Goodale. Officers for the coming year will be elected.

F-111's Lethal Weaponry Array Put to Test at Eglin in Florida

Flight testing of the F-111's lethal array of weaponry and sophisticated entry systems is being carried out at Armament Development Test Center, Eglin AFB, Fla.

About 90 Fort Worth division people—half of whom were hired locally—and a dozen or so Air Force personnel comprise the flight test team which is in its third year of operation.

Statistics tell the story: over 225 flights in three years in support of F-111A systems tests; a total of 1,600 launches or drops of conventional bombs, nuclear shapes, rockets, missiles, and other weapons; 174 flights over a two-year span.

"The entry systems are highly complex, and the state of the art has been extended considerably as a result of these tests," said Chuck Widaman, F-111 test manager at Eglin.

During testing, 70 airborne missiles were launched "against" the airplane, and over 2,000 flares ejected for purposes of missile detection and chaff/flare dispenser evaluations. Almost 70,000 rounds of 20mm ammunition were used to establish weapon-bay gun and airplane enviromental compatibility, as well as boresight/dispersion accuracies.

F-111A No. 5 and some Combat Lancer airplanes, including Nos. 24, 37 and 71, were used in evaluating entry systems; the mission and traffic control subsystem, and the weapon-bay gun installation. Environmental control system and vibration and acoustics data were also collected, with contributions from aircraft No. 24, 37 and 71.

F-111A No. 7 was used extensively, along with F-111As No. 3, 8 and 10, in the 174 weapon-separation flights.

"To get valid test data," said Widaman, "every weapon had to be inspected, weighed, ballasted, etc. Proper unloading, fuzing and arming are also critical to a safe carriage and drop.

"How well these tasks were carried out is shown by the fact that neither a 'hung weapon' abort nor an "inadvertent' firing has ever been attributed to the contractor field operations personnel."

Voluminous data was gathered during the Eglin flights. On entry systems missions, 1.25 million feet of magnetic tape data and 50,000 feet of film data were recorded, processed and reduced at ADTC. Over .75 million feet of on-board magnetic tape and .25 million feet of film data were generated during weapons separation to certify weapons, airplane, and systems capability with respect to weapon-separation, release-point accuracy, ballistics and ground-impact accuracy.

"A considerable amount of weapon-separation and ballistic computer data were required before Combat Lancer F-111s were deployed to Southeast Asia, Widaman noted.

All facility needs are under one roof at Eglin. A high-bay hangar accommodates two F-111s and much of the support equipment. Adjoining ramp space will accommodate two additional aircraft. Favorable weather permits outside work year round. Offices are located on either side of the hangar floor.

"Literally thousands of visitors have received shipside briefing on the F-111," Widaman said. "And static displays and flybys have given us a chance to expose the aircraft to both visiting military VIPS and the local citizenry."

Eglin Called 'Most Sophisticated' Of All Air Force Test Centers

The Armament Development Test Center at Eglin AFB, Fla. is the largest and probably the most sophisticated of all Air Force test centers.

ADTC is commanded by Maj. Gen. A. J. Kinney and staffed by military and civilian personnel with "depth and dedication."

"Our relationship couldn't be better," said Chuck Widaman, F-111 test manager at Eglin. "Accomplishing flight tests at the ADTC-Eglin complex over the past three years has demanded a strong customer-contractor team effort for overall mission success.

"To get off a mission and process data involves from 100 to 200 military and civilian base personnel—some as far as 200 miles away on a radar site or water range.

"Water and land ranges, radar sites, ground cameras, weapons preparation, instrumented chase aircraft, and voluminous data processing and reduction are just a fraction of the support required and coordinated daily by the competent and compatible AF/GD team members."

Assistance Sought In Glider Program

Hans Busch, Electronics-SD senior contract analyst, is soliciting volunteer help from General Dynamics mechanical and aeronautical engineers as advisers in a glider program for youngsters.

Busch, president of the John J. Montgomery Glider Program, Inc., said present efforts are aimed at fund-raising to finance construction of a glider for youth instruction.

Pacific Southwest Airlines (PSA) is assisting by offering a scenic jet flight around San Diego county at 10:00 a.m. March 15 (tickets $5) to help raise capital.

Busch may be reached for information and ticket reservations at LF ext. 1496.



THE SKIPPER—Maj. Gen. A. J. Kinney, ADTC commander, and Earl Guthrie are shown on occasion of general's F-111A orientation flight.

Production F-111A With Boron Panel in Service

F-111A No. 113 equipped with the first production boron component, went into service at Nellis AFB last month, marking a major milestone in development of composite aircraft materials.

A total of 22 tactical variable-wing fighters—Nos. 113 through 134—will be fitted with identical boron wing trailing-edge panels and tested for operational suitability by tactical units.

The boron panel, which is about two-by-five feet, is 16 per cent lighter than the same aluminum-covered panel.

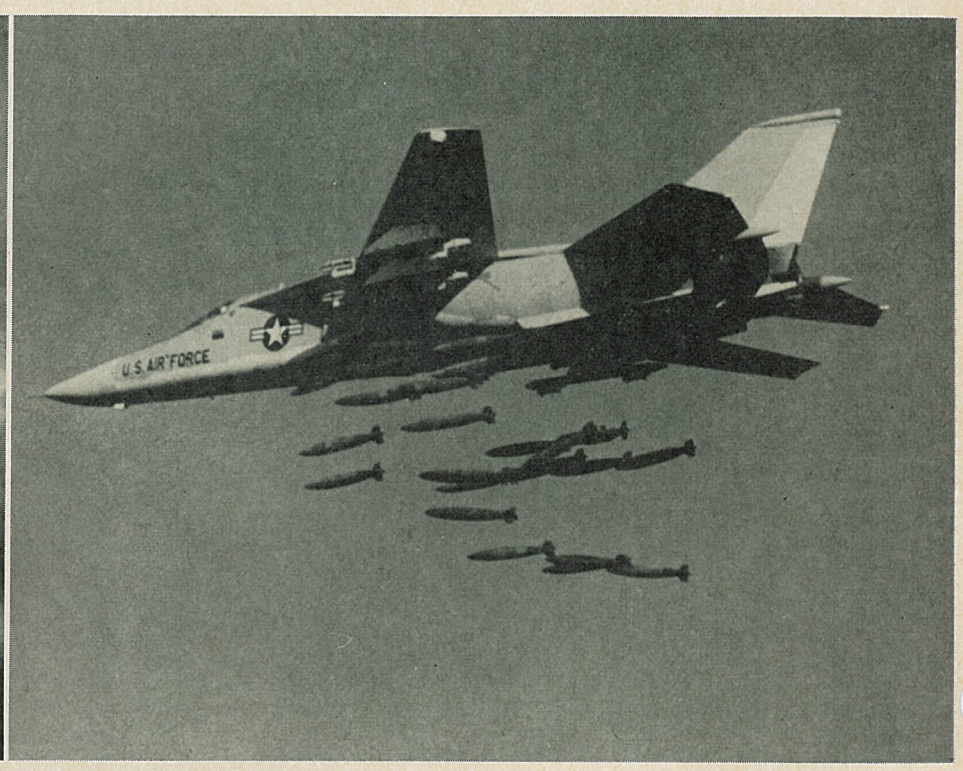
"Weight savings on the part would be considerably greater if the honeycomb core and fittings were of boron," said Charles W. Rogers, assistant project engineer.

Boron components are formed by embedding hair-thin boron fibers in any epoxy-plastic carrier material or matrix. The resulting composite material is potentially as strong and as stiff as steel, and 25 per cent lighter than aluminum.

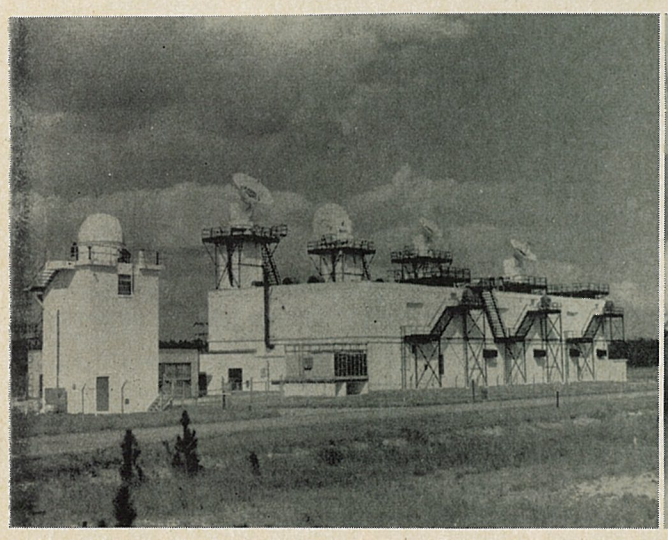
Service testing of the production part of F-111As climaxes an intensified production demonstration program by General Dynamics, in conjunction with Air Force Materials Laboratory at Wright-Patterson AFB and the F-111 system program office.

Fort Worth division has been developing boron-epoxy composites since 1965 under contract to AFML. Three experimental boron parts were built and flight tested experimentally on F-111As in 1967 and 1968: an air-director door, main landing gear aft door, and wing trailing-edge panel.

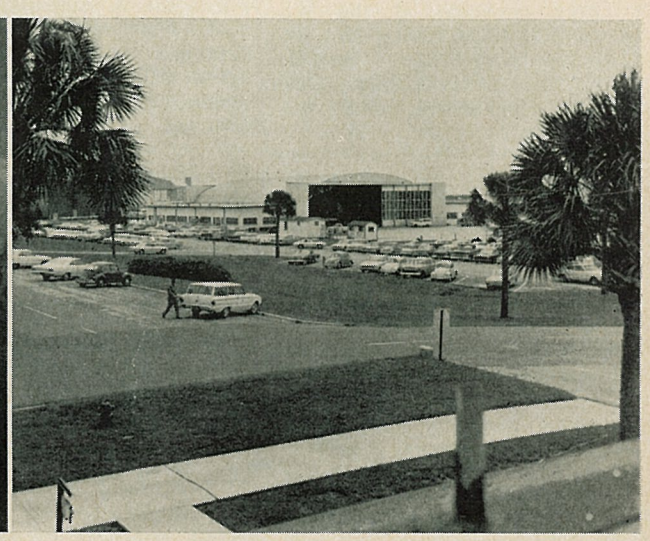




LETHAL LOAD—At left, M-1117 bombs (19,750 lbs.) are on way to target. At right, MK-82 bomb salvo leave racks/pivot pylons.





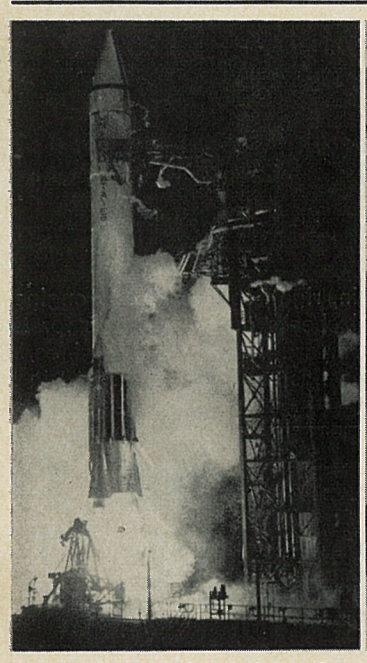


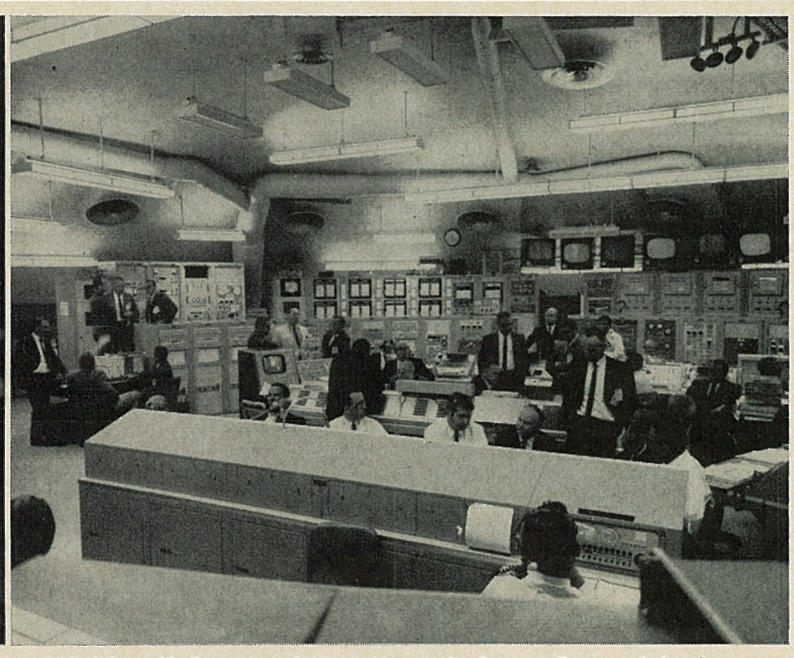
FLORIDA BASE—At right is site of F-111 armament testing at Eglin, AFB. Center: flight evaluation meeting gets down to nitty-gritty with Hal Burt and Phil Day. Left: multitude of range sites such as this are daily support of F-111A tests. About 100 make up flight test team.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 6 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, March 19, 1969





MARS MISSION—Atlas-Centaur 20 lifts off Complex 36B at Kennedy Space Center, left photo, on mission that sent first of two identical Mariner '69 spacecraft on Mars flyby trajectory. Right photo shows Complex 36 blockhouse activity early in countdown. Among those at launch conductor's console in foreground are Convair's Virgil Duduit, blockhouse monitor, and Dan Sarokon, launch conductor, both with headsets; John D. Gossett of NASA, and, standing, Robert H. Gray, NASA associate director of unmanned launch operations.

AC-19 Prepared For Mars Probe

Convair's Atlas-Centaur 19 is undergoing final launch preparation before sending NASA's Mariner 7 on its mission to photograph the planet Mars.

Mariner 7 is the second identical Mariner '69 spacecraft being launched by Atlas-Centaur for Mars flybys five days apart in July and August. Mariner 6 was launched Feb. 24.

The Mariner '69 spacecraft, in addition to photographing the "red" planet, will carry experiments to determine whether the Martian environment is suitable for life, to establish the basis for future experiments in the search for extra-terrestial life, and to develop technology for future Mars missions.

Mariners 6 and 7 are the first in the Mariner series to be launched by Atlas-Centaur rather than Atlas-Agena for increased spacecraft payload weight capability.

The '69 Mariner launches also mark the first use of Atlas-Centaur for interplanetary missions.

Mariner 6 is scheduled to fly past Mars July 30 and to obtain close-up photos of its equatorial region. Mariner 7 will make its polar pass of the planet Aug. 4.

TV cameras aboard the twin spacecraft will make full-disc photos of the planet during approach and wide-angle shots of the Martian surface during flyby.

Pictures taken during the approach will show objects about 15 miles in diameter. Objects 900 feet in diameter may be distinguishable in the flyby surface pictures.

Walt Hicks is Convair project engineer for the Mariner '69 launches.

AC-20 was launched from Complex 36B at Cape Kennedy and AC-19 will be launched from Complex 36A. Both launches are being handled by the same Convair launch crew with Dan Sarokon as launch conductor.

Jet Propulsion Laboratory has project responsibility for the spacecraft. Tracking and communication will be provided by NASA's Deep Space Network stations.

AC-19 Review Takes 'Tigers' To Florida

A "tiger team" from Convair's Kearny Mesa plant was at Cape Kennedy last week for a product review of the Atlas-Centaur 19 launch vehicle for the upcoming Mariner-Mars mission.

Team chief was W. S. Hicks with J. W. Swigart as Atlas program leader, B. R. Foushee as technical chief, C. C. Campbell Jr. heading equipment assessment, and J. F. Serafin as team coordinator.

Other members of the team and their areas of responsibility were:

Mechanical systems — J. D. Soltmann, R. T. Fox (captain), R. L. Eidson, E. R. Kimmy, J. G. Bodle, C. W. Aulgur, and M. J. Debreceni.

Electrical systems—C. L. Hyde, F. L. Cook (captain), G. L. Tidwell, W. W. Deane, J. B. Nechvatal, C. H. Arth, and E. S. Jeris.

Flight control — W. F. Sauer (captain), E. H. Luke, D. G. Huber, R. L. Shoff, and LeRoy White.

Structures and analytical — G. C. Krumweide, E. H. Christensen (captain), P. Buchy Jr., and C. Pruckner.

Reliability — J. W. Taylor, A. W. Wiest, B. H. Peyton, and C. C. Campbell Jr. (captain).

Test evaluation — J. H. Azeka.

'Drop Tanks' of Future Subject For New Study

Potential materials, construction techniques and designs for low-cost expendable fuel tanks for use with future advanced launch vehicles are being investigated by Convair division in a one-year study for the U.S. Air Force Flight Dynamics Laboratory at Wright-Patterson AFB, Ohio.

Manned vehicles of the future that would use such cryogenic propellant "drop tanks" would retain the expensive engines used to propel them into space but would jettison the low-cost tanks used to provide propellant during launch.

One of the launch-spacecraft configurations being considered is a Delta-shaped lifting-body craft with large jettisonable fuel tanks along both sides of the body.

John H. Heathman of Convair's space structures Dept. 512-2, the study manager, said emphasis will be on selecting minimum

(Continued on Page 2)

Clubs Will Hold Joint Meeting

John J. Graham, General Dynamics group vice president-Electronics, will address a joint meeting of Stromberg DatagraphiX, Inc. and Electronics-SD Management Clubs tomorrow, March 20.



John Graham

The joint session will be at Bali Hai on Shelter Island with cocktails at 5:45 p.m. and dinner at 6:30.

Graham joined General Dynamics in 1966 as a vice president concerned with planning the long range growth and development of the Corporation. The following year he was named Electronics group vice president, over Stromberg DatagraphiX, Inc., Electronics division, and Stromberg-Carlson Corp. Graham's background includes 20 years in aerospace and electronics.

Tickets at $4.50 for Electronics-SD members are available from club boosters.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—My car was hit and extensively damaged in a Convair parking lot. The person responsible didn't leave a note. I have $100 deductible insurance, so you can see where that leaves me. Can anything be done to keep this from happening to others?

A—The division has to depend upon the integrity of its employes in matters like this. There simply are too many cars and the policing problem would be overwhelming. Hopefully, by calling the matter to the attention of drivers through "Q and A" offenders will be encouraged to exercise their better natures and leave a note admitting responsibility. It's only the fair thing to do.

★ ★ ★

Q—Would it be possible for me to get a copy of the latest "housekeeping" poster called Picket Up? I'd like to post it in my teenage son's room.

A—Yes. Posters that have been removed from holders are available through employe benefits offices as long as they last. They will be stamped properly so no pass will be needed at the gate. One to a customer, please.

★ ★ ★

Q—Would it be possible to install a postage stamp machine somewhere close to the south end of the LF plant (preferably in Bldg. 5 or 51)? The only one I've been able to locate is in Bldg. 16.

A—As soon as machines are received from the vendor (60 to 90 days), additional stamp dispensers will be installed in Bldg. 5 and 51.

★ ★ ★

Q—Can the lenses of overhead lights in Bldg. 5, third floor, LF, be cleaned or removed to increase lighting?

A—Experience shows that cleaning diffusers has only a slight effect and removal results in glare. Relamping the entire area is due within the next few months as part of the planned maintenance program. Relamping normally is called for every two and a half years. The last relamping of this area was in March, 1967.

★ ★ ★

Q—Can anything be done to improve conditions when cars are leaving Lot 4 at LF (Rider-Driver, second shift lot) from 3:30 to 4 p.m.? Continuous cross-traffic, entering second shift cars and exiting first shift cars cause considerable congestion.

A—The south entrance to Lot 4 will be reopened when a lockable, removable chain guard is installed. This will permit guards to open this entrance at 3 p.m. for entering second shift, freeing the present entrance for exiting first shift autos.

★ ★ ★

Q—A poster said Atlas SLV had flown successfully 44 times in a row. Is this a record for Atlas?

A—Yes. The previous record was 28 in 1963-65.

MARINER 6 'OFF' BY ONLY SECONDS FOR PLANET FLYBY

Mariner 6, launched by Atlas-Centaur 20 Feb. 24, has been placed in orbit so accurately that its Mars flyby is expected to be less than one minute from the desired time of 10:18 p.m. July 31.

At arrival, Mariner 6 will have traveled 383 million kilometers. (A kilometer is .62137 mile.)

D. C. Swanson, Dept. 986-3, said Mariner 6 at 4 p.m. (San Diego time) yesterday was 6.3 million kilometers from earth, 136.8 million kilometers from Mars, and 150.7 million kilometers from the sun. It was traveling 32.77 kilometers per second relative to the sun.

The spacecraft is traversing an eliptical orbit about the sun with a perihelion of 148.1 million kilometers and an aphelion of 238.1 million kilometers.

Products Caravan Visit Scheduled

A caravan of products sponsored by Electronic Design News magazine will visit Lindbergh Field plant, Tuesday, April 1.

On display will be new items from a number of instrument, electronic, and electro-mechanical manufacturers that will be of interest to engineers, technicians, purchasing agents and related professions.

Open from 1:30-4:30 p.m., the caravan will be located in parking lot 6, south of the Lindbergh Field cafeteria.

Products and their applications will be demonstrated by factory representatives who will be on hand to answer questions.

Mars Launch Draws Praise From NASA's Centaur Manager

Convair General Manager Jack L. Bowers has received the following message from William R. Dunbar, Centaur project manager for NASA Lewis Research Center regarding the recent Mariner-Mars launch by an Atlas-Centaur launch vehicle:

"Please accept my sincere thanks and well done to the entire Convair Atlas/Centaur team both at San Diego and ETR for the successful first half of our Mariner 69 double header. The recovery after the incident on 36A was an outstanding example of total commitment and dedication to the space launch vehicle program. I am also anticipating with full confidence in the Convair team a launch on schedule for the second Mariner 69. Again, congratulations and well done to everyone who made AC-20 an outstanding success."

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Feb. 16 and March 15.

Thirty-year: Dept. 143, J. A. Mello; 149, G. L. Helling.

Twenty-five year: Dept. 002, J. C. Huff; 019, E. W. Ferrin; 027, A. Hernandez; 101, S. J. Wooters, 130, R. B. Purdy; 149, C. A. Keeth, J. D. Sanders; 401, F. J. Toth, D. F. Winters; 588, J. A. Howland Jr; 761, H. D. Hill, C. G. Bracey; 820, E. M. Lizarraras; 831, H. A. Heink, D. E. Rheaume; 840, M. Gonzales; 985, L. M. Barnes.

Twenty-year: Dept. 015, L. R. Hance; 019, M. Console; 049, C. Esquivel; 058, R. H. Detwiler; 059, P. R. Carlton Jr., June R. Cass, J. P. James; 110, E. H. Boardman; 144, F. J. Bourgeois Jr., 597, O. F. Oldendorph; 732, J. V. Vecchio; 835, L. A. Rodriguez; 840, Catherine W. Hinton; 860, E. W. Gildersleeve; 953, L. E. Laffen.

Fifteen-year: Dept. 002, P. House; 027, J. R. Myers, J. H. Parsons, J. E. Peters; 031, J. L. Barnes; 059, H. E. Baxter; 144, R. H. Poulsen; 202, R. J. Franklin; 250, B. G. Bourguignon, J. H. Jordon, S. C. Kelly; 400, M. T. LaReau; 401, J. E. Schimka; 402, Gloria A. Gatewood; 454, A. F. Morris; 515, Phyllis M. Julian, A. J. Kelly; 519, F. Washburn; 524, Nancy P. Young; 533, R. L. Ortega; 541, W. A. Ziehi; 544, P. A. Johnson; 566, L. B. Shaw; 567, W. M. Gossett; 598, P. A. Bergin; 756, F. E. Rogers; 761, W. M. Treichel; 780, Frances L. Marries; 810, Marion D. Hammersiey; 962, J. Morgan, R. W. Stoker.

Ten-year: Dept. 027, V. F. Passmore; 101, H. J. Davis, Betty L. Dodd, Nadine F. Prior; 110, Mary J. Hodge; 130, R. W. Brown, Marjorie H. Frink; 149, L. Aranjo, H. F. Elgin, J. J. Viera Jr.; 194, Patricia M. Kennedy; 196, Elizabeth R. Colace, R. C. Wilson; 202, L. R. Gilmour; 250, D. E. Belchamber, M. Boyd, V. H. Marshall, C. Wiley, W. J. Wissinger; 400, F. R. Filley, 403, R. Degn; 452, J. L. Nicodemus; 514, D. L. Trusk; 515, J. O. Photinos, 516, B. Ortiz; 518, Verna L. Rozell; 519, Katherine I. Slubowski; 532, J. J. Driscoll, R. Okonski, R. W. Saunders; 566, E. Fitzpatrick Jr., C. O. Fort; 572, J. L. Christian; 581, D. J. Jones Jr., 585, F. D. Steketee; 592, J. R. Burnett; 596, M. F. Dorian; 597, T. C. Boren; 780, Theresa D. Donnella, Katie L. Gipson, Nancy G. Graves, R. E. Krantz; 810, J. W. MacNeil, F. Salas; 831, R. K. Byers; 840, W. R. Teran; 860, F. E. Rogers; 958, D. R. Nash; 962, R. L. Nelson; 967, J. G. Largent; 979, C. R. Barron, G. G. Baxter, A. Estes, R. T. Simms, W. H. Strange, R. R. Wetherington; 985, R. L. Cameron, L. W. Orosz; 986, W. P. Glunt.

ELECTRONICS

Thirty-year: Dept. 424, R. W. Allen.

Twenty-five-year: Dept. 423, Oveta T. King.

Twenty-year: Dept. 921, C. E. George.

Fifteen-year: Dept. 391, A. E. Degler.

Ten-year: Dept. 102, Janet M. Pershal.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Feb. 28.

Dept. 545, G. C. Alexander, $25; 027, A. R. Anderson, $174.20; Dept. 517, R. W. Anderson, C. K. Martin, $8.40 each (joint award); 019, A. Arguello, $15; 507, K. R. Bailey, E. V. Marikle, $21.20 each (joint award); 756, W. J. Brunnhoelzl, $75.80; 027, D. W. Burright, $562.80; 143, G. D. Clark, $148.20; 149, L. H. Cooke, $33.80; 059, V. A. Dailey, $82.80; 059, R. L. Dixon, $21.30; 572, M. M. Dumler, $15; 250, M. C. Escareno, $15; 731, P. L. Hamm, $40.10; 001, J. H. Hammer, $140.30; 027, W. F. Hoover, $255.70.

Dept. 001, D. E. Howard, C. E. Scott Jr., G. W. Weide, $13.77 each (joint award); 142, L. E. Johnson, $126.60; 979, J. A. Knight, $15; 780, G. E. Lokey, $21.30; 101, D. A. McVay, $39.70; 027, D. R. Noon, $65.40; 400, H. G. Peltier, $122.50; 143, R. R. Reekers, $15; 143, D. W. Reynolds, $15; 401, N. E. Rodgers, R. A. Taylor, $11.90 each (joint award); 027, F. J. Serio, $71.80; 979, J. H. Siems, $15; 574, C. G. Skeen, $127.10; 027, L. R. Stevens, $25.40; 250, J. T. Taylor Jr., $641.90; 130, N. E. Wallace, $15; 589, J. P. Walsh, $132.10; 574, C. W. Weber, $177.50 (three awards).

Employe Suggestion awards approved for the week ending March 7.

Dept. 140, C. L. Amaral, $17.30; 519, T. P. Balistreri, V. Haydel, $390.25 each (joint award); 250, D. E. Belchamber, M. E. Nicolet, W. White, $5 each (joint award); 578, R. W. Bleeker, $18.40; 045, S. A. Carlson, $15; 027, R. A. Chavez, $115.20; 761, M. B. Cottrell, R. L. Long, $15 each (two joint awards); 027, R. C. Desaulniers, $36.10; 141, R. E. Doran, $15; 143, J. Doyle, $32.80; 002, B. B. Duck, $15; 524, A. F. S. Fitzhugh, $15; 780, B. J. George, $15; 756, C. A. Harrington, H. D. Prince, $58.10 each (joint award); 015, R. E. Harrington, $18.10; 001, D. C. Herstedt, $75.

Dept. 027, J. L. Killeaney, $112.20; 045, J. T. Kucala, $30 (two awards); 170, R. Ledesma, $46.20; 761, R. L. Long, $15; 015, J. K. McDonough, $35.30; 045, R. G. Peishel, $15; 574, N. F. Peters, $15; 031, L. P. Petersen, $15; 031, E. F. Quinn, $94; 143, R. R. Reekers, $15; 142, I. J. Romero, $15 015, R. E. Rufing, $15; 143, G. A. Rummel, $15; 143, P. Sletnar, $50; 045, J. D. Volkov, J. T. Kucala, $9.75 each (joint award); 985, O. J. Washburn, $53; 027, J. A. Wilcox, $57.10; 027, H. M. Zeno, $55.30.

Births

CONVAIR

CULVER—Son, Lee Adam, 8 lbs. 2 oz., born Feb. 25 to Dolly and Ron, Dept. 401.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Papers Presented

CONVAIR

FOREST—J. D., N. R. ADSIT, Dept. 572. "Compression Testing of Aluminum-Boron Composite Material." ASTM-Composite Materials: Testing & Design, New Orleans, La., Feb. 12-13.

KROPP—C. J., Dept. 572. "A Superior Titanium-Base Alloy for Structural Applications at Cryogenic Temperatures." Society of Automotive Engineers Meeting, New Orleans, La., Feb. 20.

Papers presented at The Society for Underwater Technology / International Oceanology Conference, Brighton, England, Feb. 16-21.

DEVEREUX—R. F., Dept. 506. "Long-Distance Telemetry of Environmental Data From the North Pacific Experiment."

PETRE—J. W., Dept. 506. "Operational Experience with the Prototype Large Navigational Buoy."

Rider-Driver

CONVAIR

RIDE WANTED—From Poway to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Will consider carpool. Call E. R. Cornell, ext. 2252 LF or (home) 748-2199.

RIDE WANTED—From East San Diego, 39th and Meade, to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Phone Kay Knoff, ext. 671 LF or (home) 282-2743.

RIDE OR CARPOOL WANTED—From 6th and Hoover, National City, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Fred Snyder ext. 1488 LF or (home) 477-1812.

RIDE OR CARPOOL WANTED—From 64th and University or El Cajon Blvd., to Lindbergh Field plant, 7:30 a.m. to 4:15 p.m. shift. Call Al Stone Ext. 1708 or (home) 583-5725.

RIDE OR CARPOOL WANTED—From Encinitas area to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Jerry Hughes, ext. 542 or 1146 LF.

RIDE WANTED—From 7500 University Ave., La Mesa to Lindbergh Field plant. 7:30 a.m. to 4:15 p.m. shift. Call Allene DeVoe, ext. 624 LF or (home) 465-5527.

Retirements

CONVAIR

BOYNTON—L. T., Dept. 979. Seniority date March 27, 1956, retired Feb. 28.

CRAIG—Carl., Dept. 985. Seniority date Oct. 12, 1950, retired Jan. 7.

CWIEK—Andrew S., Dept. 400. Seniority date Oct. 9, 1947, retired Feb. 28.

GARREN—Helen M., Dept. 204. Seniority date Jan. 17, 1952, retired Feb. 22, 1964.

GATHARD—John, Dept. 250-6. Seniority date Oct. 6, 1952, retired Feb. 28.

GORMAN—Jack A., Dept. 196. Seniority date Dec. 5, 1940, retired Feb. 28.

HORTON—Clifford E., Dept. 985. Seniority date Aug. 15, 1951, retired Feb. 28.

KING—William R., Dept. 250-3. Seniority date Nov. 6, 1956, retired Feb. 5.

MELLO—John A., Dept. 143. Seniority date April 28, 1948, retired Feb. 28.

SCHALLER—Lawrence L., Dept. 551. Seniority date Jan. 25, 1943, retired Feb. 28.

SCHWENKE—Gerhardt W., Dept. 250. Seniority date July 9, 1953, retired Feb. 28.

TROWBRIDGE—Ora A., Dept. 985. Seniority date March 14, 1955, retired Jan. 29.

TURNER—Lester B., Dept. 756. Seniority date April 13, 1956, retired Feb. 21.

WEBBER—George W., Dept. 403. Seniority date Sept. 11, 1956, retired Feb. 17.

Personals

CONVAIR

I wish to thank my many Convair friends for the cards, flowers and thoughtful help during the recent illness and hospitalization of my wife.

Gordon J. Needles, Dept. 059-5

* * *

The kind expressions of sympathy from my friends at Convair after the loss of my wife, June, were gratefully appreciated.

F. D. Applegate
Dept. 509-0

Deaths

ALLEN—Floy C. (retired), died March 4; survivors include daughter, Dianne F. Sketchley and son-in-law, R. Sketchley, Dept. 250.

BROWN—Schack C. (retired Jan. 30, 1959), died March 2; survivors include his wife, Neita.

GALLANT—Henry E. (retired), died March 5; survivors include wife, Mary Ann.

GIDDINGS—Homer E. (retired March 6, 1963), died March 2, 1969; survivors include wife, Barbara L.

HOLMES — Forest Nathan (retired Dec. 10, 1965), died Feb. 26, 1969; survivors include wife, Mabel O.

JURY—Ralph A. (retired Feb. 28, 1958), died Feb. 1; survivors include a son, Ralph Jr.

LAVINE—Edgar W. (retired Feb. 2, 1960), died Feb. 14; survivors include his wife, Lillian.

WHORTON—Daniel, Dept. 031, died March 10. Survivors include his wife, Mary E. and 2 stepdaughters.

ZAWORSKI—Stanley F. (retired Feb. 15, 1957), died Feb. 20, 1969; survivors include daughter, Beulah E. Wallace.

Posters Win Awards In L.A. Competition

Two Convair division posters won first and second place awards in a Technical Illustrators Management Association competition in Los Angeles. Both were produced by art and editorial Dept. 517-0.

A poster by Burt Brockett inscribed with the "tap . . tap tap . . . tap" of a cane and promoting use of safety glasses took first place. A security poster by Gary Hamada titled "Close the security gap" placed second.

Convair also had two other entries in the competition — a recruiting brochure by Jack Davis and a "Mr. Muffet" security poster by Willis Goldsmith.

Test Engineer's Ideas Result in $2,466 Payoff

Harold G. Brittain, Dept. 578-1 senior test lab engineer at Convair's Sycamore Canyon Site B, recently received Employe Suggestion award checks for $2,466.90 for suggesting improvements that will save the division 10 times that amount in a year.

Brittain received $1,739.80 for proposing use of a converter to change low-pressure liquid hydrogen to high-pressure gaseous hydrogen for use instead of costly gaseous helium when possible in purging, warming and test operations.

Gaseous helium costs $42 per thousand cubic feet, compared with $1.92 for liquid hydrogen.

Brittain also received $727.10 for proposing installation of relief valves on liquid nitrogen and liquid hydrogen storage tanks at Site B to reduce both the amount of gas being vented to the atmosphere overnight and being used later for tank repressurization.

He previously had received a $183.10 partial payment award for the same suggestion after a relief valve had been installed last year on a 28,000-gallon liquid nitrogen tank at the gas flow lab at Kearny Mesa.

Brittain has received a total of $4,649.40 for five Employe Suggestions approved during the past two years.

The liquid to gaseous hydrogen converter installed last month at Site B was purchased commercially and installed at a cost of $29,000.

Liquid hydrogen is pumped at 4,000 pounds per square inch to a vaporizer where it is converted to a gas through heating then fed into lines serving all Site B test pads.

R. T. Tuttobene, test lab group engineer, said about a third of the gaseous helium formerly used at Site B is expected to be saved through substitution of gaseous hydrogen as a result of the converter system's use.

Relief valves installed on the storage tanks at Brittain's suggestion maintain pressure at 20 pounds per square inch overnight and over weekends. This reduces the amount of liquid that must be taken from the tank, converted to gas and returned to the top of the tank for pressurization before test operations resume.

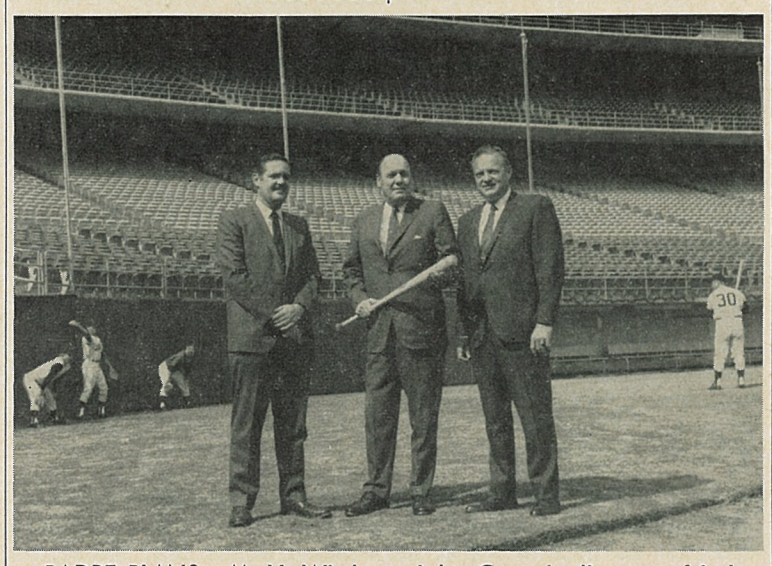
Season Tickets for Baseball on Sale

CRA has season tickets for 81 San Diego Padres home games on sale at $265 each.

George Schmiedel, supervisor of recreation, said the tickets are for "the finest seats available in San Diego Stadium." Opening game will be with Houston April 8.

Arrangements can be made for two employes to purchase a season ticket with each attending 40 games.

Phone CRA, ext. 1111 KM, for details.



PADRE PLANS—M. V. Wisdom, right; Convair director of industrial relations, and George Schmiedel, left, supervisor of recreation, discuss plans for CRA sale of San Diego Padres' season tickets with Buzzie Bavasi, president of San Diego ball club. Getting fielding practice in background as Pete Jernigan hits a few, are left, Johnny Podres, Mickey Thompson and Larry Loughlin.



DOUBLE WINNER—H. G. Brittain, right, senior test lab engineer at Convair Site B, receives award checks and certificates for two Employe Suggestions from Paul Ferrara, director of engineering administration and services. Brittain has received $4,649.40 in ES awards during past two years.

'Drop Tanks' of Future Subject For Convair Structures Study

(Continued from Page 1)

cost structural materials, fabrication techniques and insulation for propellant tanks and determining their reliability for space-launch use.

"Such tanks would be heavier but far less expensive than current launch vehicle tanks," he said. "We will, in effect, be determining whether standard commercial structural materials and manufacturing techniques can be adapted—for economy—to space launch operations."

Commercial alloys of aluminum, steel and titanium will be compared for cost effectivity with the advanced alloys being used in the aerospace industry.

Materials meeting American Society of Mechanical Engineers boiler and pressure-vessel code standards or a modification of the ASME code will be included.

Each material studied will be evaluated for compatibility with liquid oxygen and liquid hydrogen, strength and fracture-roughness at cryogenic temperatures, weldability, stress-corrosion cracking resistance, and ease of fabrication.

"In future launch applications in which propellant drop tanks would be used, weight will still be important—but not nearly to the extent it is in today's programs," Heathman said. "Overall cost and reliability will be basic considerations."

Conditions affecting tank design such as heating rates, temperature distributions and loads during ground operations and launch will be analyzed, as will effectiveness of internal and external insulation materials including foam, plastic honeycomb, foam-filled honeycomb and cork.

At least three tank materials and one or more optimum structural concepts found "most promising" during the first phase of the study will be selected for preliminary design during the second phase.

Basic cost data on each concept and material combination, independent of specific tank configuration and size, will be generated in later study phases for future use in systems design, size and cost determinations.

Extensive quality control evaluations will be included and a detail quality assurance program will be prepared for each of the material and tank design concepts for which preliminary designs are prepared.

John C. Hopkins, industrial engineering specialist in Convair's Dept. 403-3, will be responsible for definition and analysis of manufacturing processes and quality control requirements for each of the tank concepts.

Others with key roles in the study and areas of responsibility include F. A. Fujimoto, structural design; J. F. Fischer Jr., structural analysis; B. J. Kuchta, dynamics and loads analysis; C. H. Young, thermodynamics; G. B. Yates and Julius Hertz, insulation materials evaluation; J. W. Streetman, propellant systems analysis; L. D. Girton, material properties evaluation; M. L. French, mass properties analysis, and J. E. Pate, price estimation. A. W. Spencer of Dept. 581-5 was proposal leader.

Advanced systems Dept. 581-5, under R. A. Nau, is investigating reusable launch vehicle-spacecraft concepts utilizing low-cost tank technology.

Income Tax Data Listed

Filing deadline for state and federal income tax returns is less than a month away.

A limited amount of Federal short forms and State tax schedules are available at Convair employe benefits offices.

Employes also may get tax forms and information from the following:

U. S. Department of Internal Revenue, 3977 Ohio St., 293-5151; California Franchise Tax Board, 1350 Front St., 232-4361.

Convair employes itemizing medical deductions on 1968 income tax returns may deduct dependent insurance premiums for the period during which they were paid.

Hourly employes with dependent coverage paid $2.33 weekly Jan. 1 through Dec. 22. Salaried employes paid $2.01 weekly Jan. 1 through Sept. 1 and $1.34 weekly Sept. 2 through Dec. 22.

Employes may also deduct disability insurance paid to the State of California as a tax. This was 1 per cent of the first $7,400 in earnings or a maximum of $74.

Forms summarizing this information may be obtained from employe benefits, Dept. 130-5.



MONEY TALK—Asset Management Program was subject of one-day seminar held recently at Fort Worth division, attended by representatives of various General Dynamics operating units. From left: E. E. Hatchett, Fort Worth; John Schloff, Electronics; R. V. Bullock, Fort Worth; J. H. Wills, Convair; H. W. Swett, Pomona; E. J. Hornung and W. F. Foster, Corporate Headquarters; R. W. Elliott, Fort Worth; W. F. Mason, Canadair; H. K. Pedersen, Corporate treasurer; W. R. McCamy, Fort Worth; T. L. McPherson, Electric Boat; D. W. Lamb, Quincy; R. W. Harwell, Fort Worth.

Improved Use of Resources Aim Of 'Asset Management' Program

A day-long seminar on the General Dynamics Asset Management Program was held recently at Fort Worth division by H. K. Pedersen, Corporate treasurer.

Represented were Fort Worth, Electronics, Convair, Pomona, Electric Boat and Quincy divisions and Canadair.

Pedersen said this was the first of a series of meetings slated this year to review program progress and discuss systems for exchanging ideas among divisions.

"The fundamental, long-term objective of this program is to make sure that we are obtaining the most effective possible use of the financial resources that are entrusted to management by stockholders," Pedersen said.

He said that by improving the use of working capital in the normal course of business within the divisions, funds can be released for use elsewhere, such as the further liquidation of long-term obligations and for expansion and growth.

Coordinators have been appointed at all divisions and program targets have been set. Particular emphasis is placed on return on investment.

"Achieving maximum turnover of liquid resources requires the day-to-day attention of every operating executive," Pedersen said, "starting with the general manager and including contracts administration, purchasing, manufacturing, financial and engineering departments.

"This cannot be a 'one-shot' effort but must be a 'way of life.' Careful managerial efficiency at all levels can reduce our cash requirements and release assets for profitable use for expansion or in debt retirement, thus contributing to the health of the corporation."

Attending the seminar were: E. E. Hatchett, controller, Fort Worth division; John Schloff, assistant controller, Electronics division; R. V. Bullock, chief of revenue accounting, Fort Worth; J. H. Wills, chief of financial accounting, Convair division; H. W. Swett, manager of general accounting, Pomona division; E. J. Hornung, assistant treasurer, Corporate Office; W. F. Foster, consolidation accounting, Corporate Office; R. W. Elliott, assistant manager of general accounting, Fort Worth; W. F. Mason, assistant controller, Canadair; Pedersen; W. R. McCamy, chief of financial accounting, Fort Worth; T. L. McPherson, controller, Electric Boat; D. W. Lamb, assistant controller, Quincy; R. W. Harwell, manager of general accounting, Fort Worth.



Plant Maintenance Cost Reduction Discussed at Joint Conference

Procedures for achieving a goal of reducing maintenance costs by 15 per cent this year were discussed by the General Dynamics Maintenance Standardization Committee in a meeting in San Diego.

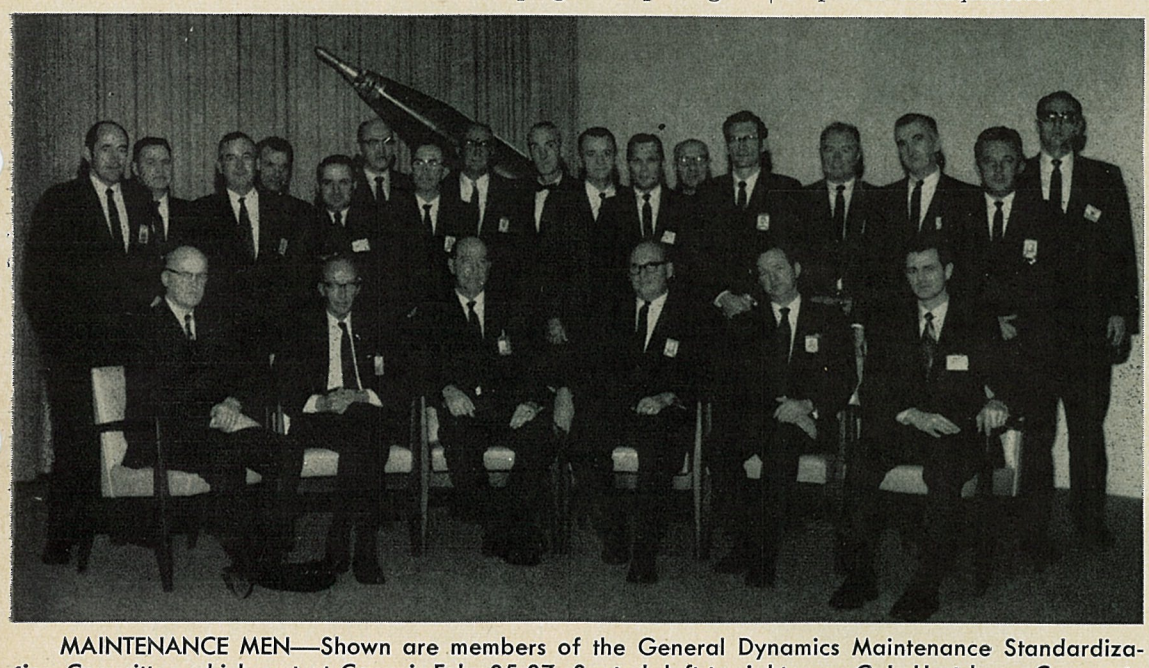
Twenty one representatives from nine General Dynamics operating units attended. W. J. Stanley of Convair is chairman.

Procedures found effective for maintenance cost reduction by one division will be considered by others. Individuals to oversee the program for each division were named and a format was established for progress reporting.

Procedures for planning, scheduling, work measurement, inventory control and evaluation of maintenance program effectiveness were discussed.

Also considered were procedures for increasing the scope of volume purchase agreements, standardization of supplies, and reduction of inventories of janitorial and electrical supplies and machinery spare parts.

Attending were representatives from Convair, Pomona, Fort Worth, Electric Boat, Quincy, Material Service, United Electric Coal, Canadair, Stromberg DatagraphiX, and General Dynamics Corporate Headquarters.



MAINTENANCE MEN—Shown are members of the General Dynamics Maintenance Standardization Committee which met at Convair Feb. 25-27. Seated, left to right, are: C. L. Hartshorn, Corporate Headquarters; L. E. Whitten, Fort Worth; R. C. Coen, Electric Boat; W. J. Stanley, Convair, committee chairman; E. W. Shaffer, Pomona; J. D. Dwyer, Material Service. Standing, left to right: C. T. Talbott, Convair; R. G. Liepold, Electric Boat; R. H. Wallace, Convair; R. L. Peterson, Pomona; P. Spartin, United Electric Coal; J. T. Holland Jr., Quincy; G. W. Oliver, Convair; J. R. Betts and A. R. Millett, Pomona; J. T. Carroll Jr., Convair; K. D. Scott, Fort Worth; J. L. Petit, Convair; R. L. Blount, Stromberg DatagraphiX; Vern Sharp, Convair; R. A. Kennedy, Canadair; A. F. Delos, Convair; O. Gudz, Canadair.

Centaur Will Send Helios Probes To Investigate Sun in 1974-75

Four German space program officials visited Convair division March 4 to discuss plans for the 1974 and 1975 Helios probes and to get first-hand information on Centaur vehicles like those that will send the Helios probes into orbit around the sun.

Helios will be joint United States-Germany solar probe missions with the U. S. providing the launch vehicles and Germany the spacecraft. Both countries will provide instruments to gather data on the sun.

The German visitors were Karl Kaesmeier, Helios program manager, and Dieter Ottemeyer, project engineer, both of Bundesministerium for Wissenschaftliche Forschung (equivalent of NASA in the U. S.) and Heinz Pampe and Wolfgang Hagenest, both of Gesellschaft fur Weltraumforschung (equivalent of Aerospace Corp. in the U. S.).

They were accompanied by Gilbert Ousley of NASA's Goddard Space Flight Center, NASA project manager for the solar probe missions.

The group previously had been at Cape Kennedy for the Atlas-Centaur 20 launch of Mariner 6, NASA's Goddard Space Flight Center in Greenbelt, Md. and NASA's Lewis Research Center in Cleveland, Ohio. They also visited Jet Propulsion Laboratory in Pasadena for a briefing on the Deep Space Network, which will provide Helios tracking and telecommunications support.

During their Convair visit, the German officials met with Ronald Rovenger, NASA Lewis resident manager; Andrew Kalitinsky, director of Convair launch vehicle programs engineering; and Deane Davis, Centaur program manager. They were briefed on General Dynamics and Convair operations and on Centaur by Robert Benzwi of the Centaur program office.

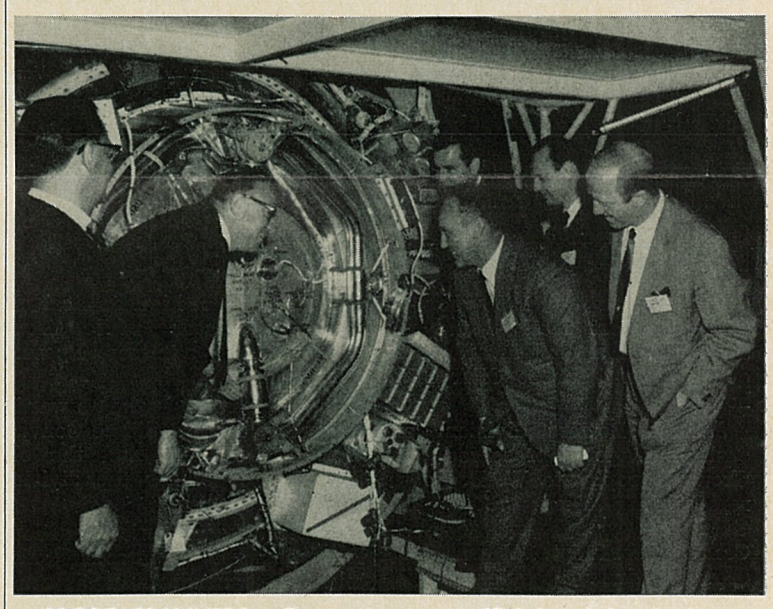
The first Helios will be launched from Cape Kennedy in the summer of 1974 with Centaur placing it into orbit around the sun and back. After a three-month flight, the spacecraft will pass within .3 astronomical units (about 28 million miles) of the sun. Three months later it will be one astronomical unit (the earth-sun distance of about 93 million miles) from the sun, followed by another .3-unit approach nine months after launch.

The Helios spacecraft will have an operational life of more than one year, so observations at the point of closest approach to the sun can be made at least twice.

Instruments aboard the craft will provide data on the direction, composition and energy distribution of solar winds in the vicinity of the sun, where the intensity is expected to be about 10 times greater than on earth.

"The scientific community is very excited about this program," Benzwi said. "It will provide a new insight about the sun. It is an ambitious program that will tax the ingenuity of the Germans who will be faced with tremendous technical challenges. The launches will be another milestone in extending Centaur's unique capability for high energy missions."

Benzwi said the German visitors had been impressed with accuracy of the Atlas-Centaur 20 launch of Mariner 6.



PROBE PLANNERS—German space officials, right, look over "front end" of Centaur during recent Convair visit to discuss plans for Helios solar probe missions. They are, from left, Karl Kaesmeier, Wolfgang Hagenest, Heinz Pampe and Dieter Ottemeyer. At left are Robert Benzwi of Centaur program office and Ronald Rovenger, NASA Lewis resident manager. Centaur will launch the Helios spacecraft.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

DONALD A. MITCHELL (1965) from Corporate Headquarters to Stromberg DatagraphiX as vice president, executive assistant; **JOHN KELLY** (1964) from Electronics division to Quincy as deputy technical director-DX; **SEYMOUR J. ROSE** (1958) from Convair to associate counsel, Stromberg DatagraphiX; **RICHARD S. ISHISAKI** (1968) from Pomona to engineering drawings checker, Stromberg DatagraphiX; **J. R. FOLKER** (1963) from Pomona to Convair as engineering drawings checker; **ALAN GENOSI** (1966) from Electric Boat to senior advance project engineer, Quincy; **DONALD H. SPEARS** (1952) from Quincy to test foreman, Electric Boat; **GEORGE W. CARMICHAEL** (1950) from Convair to Pomona as design specialist; **JOHNNY E. EVERS** (1967) from Electronics-SD to customer engineer, Stromberg DatagraphiX; **D. C. WOHLFERT** (1963) from Pomona to Convair (Huntsville) as senior flight test engineer; **HARRY T. DILLON,** from Corporate Headquarters to Convair as manager of San Bernardino office; **DAVID A. SCHLAFMAN** (1966) from Convair to professional placement representative, Stromberg DatagraphiX; **DAVID R. ARCHIBALD** (1941) from Convair to Fort Worth; **CHARLES W. DERRICK** (1950) from Convair to Fort Worth; **JACK G. DUMAS** (1957) from Convair to contracts administrator, Stromberg DatagraphiX.



FOURTH QUARTER WINNER—Electronics-SD Doppler electrical assembly group is pictured with Zero Defects banner presented for fourth quarter, 1968 performance. At left is Don C. Prim, general manager, and G. G. Prentice, manager of operations. To right of banner are T. B. Ott, Fort Worth division PQA resident rep; H. D. Bishop, Fort Worth PQA supervisor AGE equipment; W. J. Hemmer, Electronics-SD manager of manufacturing operations; R. H. Nicholson, manager of quality control; R. L. Hurst, Doppler group foreman.



SUPERIOR PERFORMERS—Don C. Prim, Electronics-SD general manager, recently presented desk pen sets and award certificates to semi-annual Craftsmanship winners. Award winners and supervisors include, left to right, Joe Geisler; G. W. Varney, manufacturing control supervisor; F. S. Acomb, purchasing supervisor; R. F. Renteria; Eva Fagan; R. J. Hogan, operations supervisor; D. A. Graybill, microelectronics lab supervisor; C. G. Franklin, calibration lab supervisor; Ardise L. Rawlins; V. G. Vassiliou; M. N. Delperdang, material control supervisor; E. E. Brundege; A. M. Mendez; R. M. McIntyre, senior electronics engineer; R. H. Nicholson, manager of quality control; Prim.

Electronics-SD Singles Out Seven For Top Craftsmanship Awards

Seven from Electronics-SD have been named winners of the semi-annual Craftsmanship awards for superior performance during the last six months of 1968.

In an awards ceremony, Don C. Prim, general manager, singled out V. G. Vassiliou, Ardise L. Rawlins, E. E. Brundege, Eva Fagan, A. M. Mendez, R. F. Renteria and Joe Geisler as recipients of the coveted individual awards.

Vassiliou, a standards development technician in the calibration lab, was cited for his ability to develop standards, precision measurements and procedures while maintaining efficiency and good workmanship.

An electronic assembler in microelectronics lab, Miss Rawlins was named for her accuracy in fabrication of microcircuits.

Brundege, a research engineering technician, was selected because of his outstanding contributions toward design and test of Ku-Band equipment.

Mrs. Fagan, a department clerk in material control, was nominated because of her accuracy in typing purchase orders.

A material planner, Mendez was chosen for his outstanding error-free performance in processing nearly 500 release documents per week.

A plastics mechanic, Renteria's selection was based on his contributions toward maintaining accuracy and good workmanship practices in the plastics shop.

Geisler, a manufacturing dispatcher, was cited for his high rate of production plus accuracy in processing both material orders and engineering change orders.

The craftsmen were presented certificates and desk pen sets at an awards luncheon last month at Kings Inn.

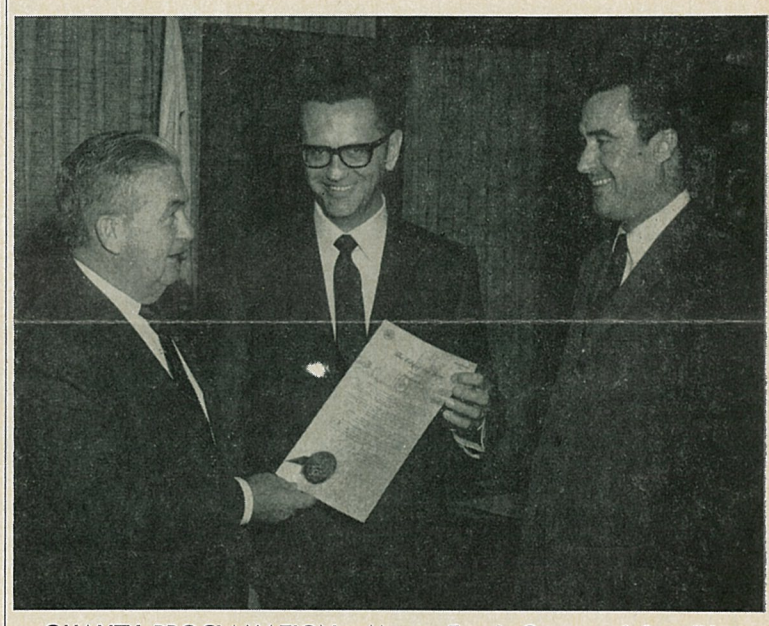
Doppler Group Wins Banner

Electronics-SD Doppler electrical group under Lyle Hurst, foreman, has been awarded the Zero Defects banner for fourth quarter, 1968 performance. R. H. Nicholson, manager of quality control and ZD committee chairman, presented the banner at an awards ceremony last month.

Don C. Prim, general manager, cited the group for their defect-free efforts during the past quarter. Previously, they had won the second quarter award.

"This was your second such award for 1968 performance," said Prim, "and is an indication that you have further improved your quality while maintaining tight delivery schedules."

A 59.5 per cent reduction of defects was recorded by the group that assembles the Doppler Radar Test Sets used on F-111A aircraft.



QUALITY PROCLAMATION—Mayor Frank Curran of San Diego, left, presents proclamation designating week of March 24-30 as "Quality Control Week" to Paul Gelles, center, chairman of San Diego section of American Society for Quality Control, and L. I. Medlock, Convair director of reliability control.

Three Safety Awards Presented at Banquet

Winners in the 1968 Convair safety contest received trophies at the 12th annual awards banquet March 4 in the CRA Clubhouse.

Jack L. Bowers, division general manager, presented the Group I trophy to W. B. Barth, representing Dept. 780-6. The Group II trophy went to R. S. Campbell for Dept. 144, while Andrew Kalitinsky accepted the off-site award for Eastern Test Range Dept. 979 employes.

Group I consists of those areas that have the highest accident "exposure factor" while Group II areas have a lesser exposure rate.

In presenting the awards, Bowers told the audience Convair "tries to be best and the objectives we set for the division will make us best."

Master of ceremonies was Gene Fox, manager of personnel, who told the gathering Convair must be "innovative" if it is to meet its "very tough safety goals."

John Hopman, Convair chief safety engineer, said although the division did not meet all of its safety goals in 1968, there were fewer accidents than in 1967. Also, the severity rate of accidents was considerably lower.

Bowers had pointed out that Convair was second in safety in General Dynamics and third in the entire aerospace industry for the year.

Dr. John McCann, Corporate director of health and safety, was among those attending.

Next Salvage Sale Slated March 29

Next employe sales day at the materials salvage yard, Lindbergh Field plant, will be Saturday, March 29. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard.

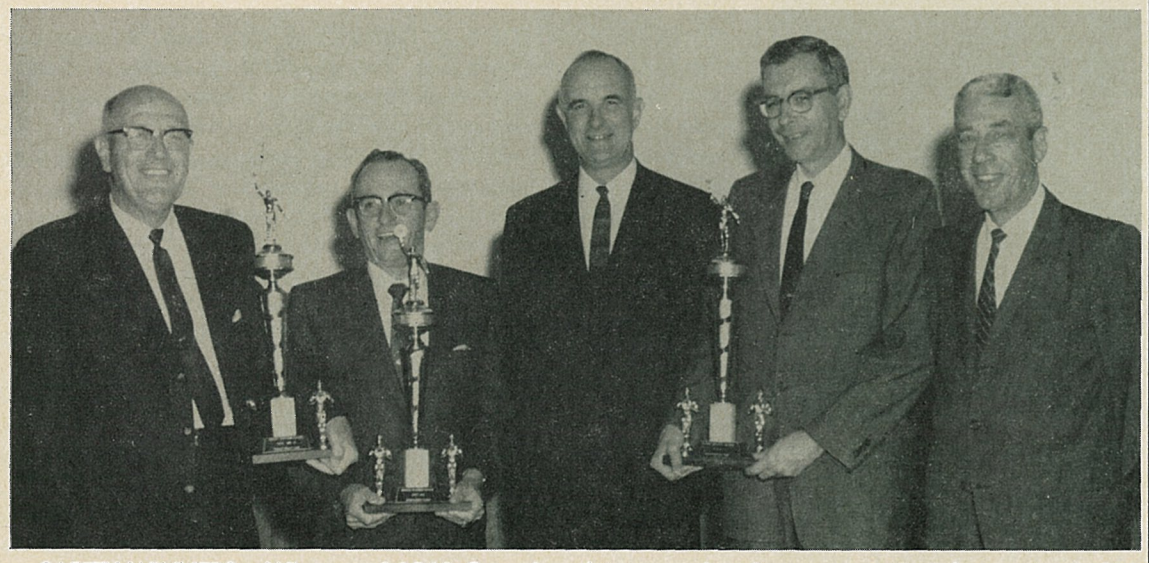
Ham Operators Begin New Net

The CRA Amateur Radio Club has begun an on-the-air network to "further stimulate interest in club activities," according to Alex Halyburton, club president.

All amateur radio operators, including non-club members, may participate in the net which goes on the air every Wednesday at 7:30 p.m. PST on 21.320 megahertz. Net control for the first few sessions will be Alex Halyburton, WB6TQF.

Other planned activities include providing radio communications for the Borrego off-road races in April and participation in the American Radio Relay League field day in June.

The Borrego races will be April 19 and 20. The first day will be a 50-mile race for novices and the second day will be a 100-mile race for expert drivers. The club will have members with mobile communications gear along the route to provide race information and emergency communications if needed.



SAFETY WINNERS—Winners of 1968 Convair safety awards after presentation banquet at CRA Clubhouse. From left, W. B. Barth, Dept. 780-6; R. S. Campbell, Dept. 114; Jack L. Bowers, Convair general manager; Andrew Kalitinsky, representing Eastern Test Range; John Hopman, Convair chief safety engineer.

Brig. Gen. Exon Will Be Keynoter For Quality Control Seminar

San Diego section of the American Society for Quality Control will sponsor its eighth annual Quality Control Seminar March 29 at the University of California at San Diego.

Brig. Gen. Arthur E. Exon, commander of the Defense Contract Administration Services Region-Los Angeles, will be keynote speaker. Mayor Frank Curran of San Diego will be luncheon speaker.

The seminar will highlight local observance of national Quality Control Week, which this year has as its theme "Customer Satisfaction."

R. H. Nicholson, manager of quality control for Electronics-SD, will be seminar chairman.

L. I. Medlock, national ASQC vice president and director of reliability control for Convair, will discuss quality control education, training and certification.

Other General Dynamics personnel speaking at sessions will be C. G. Franklin, Electronics-SD calibration laboratory supervisor, who will discuss "Calibration effect on end items" and J. A. Riegert, a Fort Worth division reliability research engineer, who will speak on "Numerical-adaptive controls."

Registration will begin at 8 a.m. at the UCSD library. Seminar sessions are scheduled from 9 a.m. to 4 p.m. Advance registration will be $5 and registration at the door $7.

Paul E. Gelles, supervisor of process quality verification for Convair, is chairman of the local ASQC section.

Ten General Dynamics men who are members of the San Diego section of the American Society for Quality Control have had technical papers published in "Quality Progress" and "Quality Assurance" magazines and in proceedings of the 23rd ASQC Technical Conference during the past year.

They are R. H. Miller of Stromberg DatagraphiX and L. I. Medlock, W. T. Hollar, C. L. Amaral, Sam Braun, W. H. Behrens, H. H. Mishler, R. G. Roscoe, P. E. Gelles and L. A. Milton, all of Convair.

GROUP COMPLETES RELATIONS SEMINAR

Fourteen supervisors from Convair's Lindbergh Field plant completed a six-hour seminar in "Human relations in today's dynamic society" last month. Problems related to the employment and social adjustment of the disadvantaged were discussed in the seminar.

CRA to Supply Breakfast For Easter Worshipers

General Dynamics families attending non-denominational Easter sunrise service April 6 at Inspiration Point in the Cuyamacas will be treated to a free breakfast later at CRA's nearby Pine Crest resort.

The service will begin at 5:30 a.m. and U. S. Weather Bureau meteorologists said the sun will rise at 5:31 a.m.

George Schmiedel, supervisor of recreation, said eggs, toast and coffee will be served around an open fire at Pine Crest after families attending the sunrise service return. Individuals can cook their own meat dish, if desired, on facilities to be provided.

The 90-acre CRA resort is on Highway 79 three miles east of Julian and directly across from the Inspiration Point turnoff.

January and February rainfall at Pine Crest totaled 23.97 inches but Jack Clendenon, resident manager, said water damage was not extensive.

Although the rains cut attendance, Clendenon said 102 campers and 537 picnickers visited the campgrounds during February.

There was 2½ feet of snow at Pine Crest during the Feb. 22-23 weekend with 142 employes and family members on hand to enjoy it.

Information on Pine Crest facilities can be obtained by calling CRA, ext. 1111 KM.

Groups Receive Con-Trib Cash

Grants totaling $13,600 for six service organizations were approved March 6 by the Convair Employes Con-Trib-Club committee.

Children's Hospital and Health Center received $5,000 as a contribution for Easter seals received by Convair division employes.

Grants of $3,000 each were made to the San Diego County Safety Council for use toward purchase of capital equipment and to the Elementary Institute of Science for operating expenses.

San Diego Mountain Rescue Team received $1,500 for purchase of communications equipment for use in rescue training and operations, San Diego Symphony Orchestra Association was granted $1,000 for its children's concerts program, and $100 was authorized for National Information Bureau subscription renewal.

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Con-Trib Assisting SD Youth Council

Convair's Con-Trib-Club early this month presented $1,000 to San Diego's Mayor's Council on Youth Opportunity for use in the council's summer program.

Henry Hodge, council director, said the money will be used to train underprivileged persons to work as counselors in San Diego County's summer youth camps.

About seventy-five 18-22 year-old youths from minority groups will be trained during their Easter vacations.

Meeting Date Set By Liberator Club

San Diego's newly formed "Liberator Club" has scheduled its April 3 meeting at Lindbergh Field plant Bldg. 14 auditorium at 7 p.m.

Formed late last year, membership is open to anyone directly involved with the production or flying the historical B-24 during WW II.

Convair alone built some 18,000 of the four-engine bombers in the 1940s.

Basic goals of the club include collecting flight logs, photos, souvenirs, jackets, insignia etc. for placement in a "Liberator" exhibit at Balboa Park's Aerospace Museum. Ultimately, it is hoped, a complete airplane will head the exhibit.

Electronics-SD Men Hear DCAS Speakers

A viewgraph presentation of the Procurement Quality Assurance Program (PQAP) as it relates to Electronics-SD was given by San Diego Defense Contract Administration Services last month.

Speaking for DCAS were Hal Goerge and Leo Crawford. Their presentations outlined organizational structure of DCAS and covered PQAP methods used in evaluating government contractors and suppliers.

About 40 from Electronics-SD management attended the two-hour session in the Lindbergh Field engineering auditorium.

'Mickey Mouse' Attracts 176

With the weatherman cooperating, 176 golfers turned out March 8 for Convair Management Club's 9th annual "Mickey Mouse" golf tournament.

Taking part over Torrey Pines South Course, in addition to Convair club members, were guests from Fort Worth division, Pomona, Vandenberg AFB, McDonnell Douglas and North American.

Jack L. Bowers, Convair general manager, led Flight 1, with net 64. Jack Hurt, Convair (66); Jerry Swarts, Convair (68); S. Swartley, Douglas (69) trailed.

Other winners and club affiliations were:

Flight 2: D. Graves, Pomona (62); Jim Ensign, Convair (66); Jack Berggren, Convair (66). Tied at 67 were W. H. Whitley, Convair; Larry Failor, Fort Worth; John Soltman, Convair.

Flight 3: S. Springer, Douglas (66); E. Reinisch, Douglas (66); Everett Fountain, Convair (68); Don Bryson, Convair (69).

Flight 4: Duane Freeburg, North American (61); B. Weir, Douglas (65); A. Frimenko, Fort Worth (67); J. Heffron, Fort Worth (67).

Flight 5: Jack Hockenberger (65); Frank Kelly (67); John Velguth (67); Al Turner (68), all from Convair.

Nick Rossman of Pomona division, Marion Hill and Al Reiter of Convair took low gross awards.

Terry Kell, director of Management Club sports activities, was in charge.

'Retirement Career' Course Scheduled

Interested employes and family members have been invited to attend a course in "Planning Your Retirement Career" at 7 p.m., Tuesdays in the Little Theatre at Crawford Adult Center, 5191 55th St.

The eight-week course began last night but late registrations are being taken. Classes will cover legal aspects of retirement, housing problems, use of leisure time and community services.

Additional information may be obtained from employe benefits offices.

Volleyball Teams Sought For League

A call is out for teams from Convair division, Electronics-SD and Stromberg DatagraphiX, to compete in an intramural men's volleyball league.

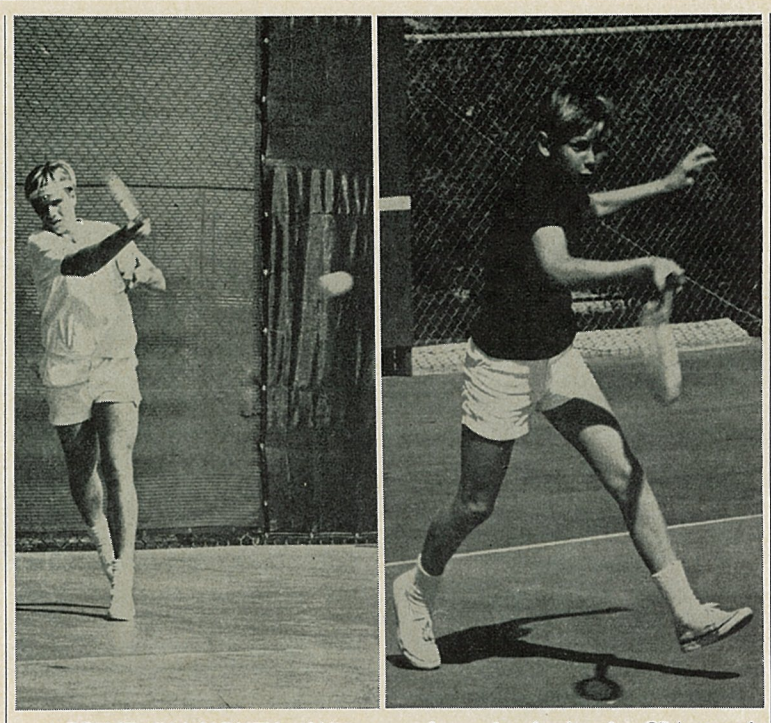
Squads may work out in the Federal Bldg., Balboa Park each Wednesday, 7-10 p.m. with league play slated to get under way the middle of April. Court reservations may be made by calling Jack Henn at 239-4421.

Teams interested in joining the new loop should contact Pete Beyrer, ext. 1111 KM.

Adventurers Club Schedules Movie

CRA Adventurers Club has scheduled a film "Arts and Times of Mexico" dealing with 3,000 years of middle America history for its meeting tonight (March 19) at 7:30 in the CRA clubhouse auditorium.

Club's next outing is March 22-23 Borrego Desert backpack. Call John Anderson ext. 1567 at LF for details.



ACCENT ON YOUTH—Winners of men's singles in CRA tennis tournament are shown displaying court talent. At left is Ricky Norwood, winner of advanced men's singles, and Chuck Griffin, right, winner of novice men's singles.

Youth Prevails as Father and Son Battle it Out in Tennis Finals

A father and son captured first and second place in the advanced men's singles division of the CRA tennis tournament.

Rick Norwood defeated his father, Cecil Norwood, to capture the title. There were 14 participants in the advanced men's section.

Eleven-year-old Chuck Griffin took the novice men's single title, defeating finalist Manuel Fernandez.

Dennis Sealey and Frank Jarlett were the winning combination in the advanced men's doubles. Finalists were Rick and Cecil Norwood.

Winners of the novice men's doubles were Manuel Fernandez and Andy Seidl. Finalists were Jim Jobe and Harold Mayer.

The novice women's singles will be played March 22 and the mixed doubles event March 29. If there are enough participants, a novice and intermediate event in mixed doubles will be scheduled.

Pilot Course Begins April 7

Six members of the CRA Bonair Flyers will provide instruction for a private pilot ground school course to begin April 7.

Jim Moody will lecture on the principles of flight, Margaret Moody on Federal Aviation Agency regulations, Steve Adams on navigation and flight computer, Bonny Adams on weather, Red Taylor on flight information publications and flight planning, and Harold Wendt on engines, instruments and radio.

The 11-week course is designed to train persons to pass the private pilot written exam, one of the FAA requirements for a private pilot license.

For information call Jim Moody, ext. 1695 LF, Steve Adams, ext. 1223 LF, or George Hazelrigg, ext. 3368 KM. Information also is available at Bonair Flyers meetings.

New Officers Named For Bonair Flyers

The CRA Bonair Flyers have elected new officers for the current year.

They are: president, George Hazelrigg; vice-president, Blair McGranahan; corresponding secretary, Julian Forcier; recording secretary, Harold Wendt; treasurer, Mrs. Margaret Moody.

The Flyers are planning a fly-in to Yucca Valley and Giant Rock on April 13. For information call George Hazelrigg, ext. 3368 KM.

Golfers Compete At Carlton Oaks

CRA Golf Club's monthly tournament will be held this weekend (March 22-23) at Carlton Oaks Country Club. Phone ext. 511 LF by Friday for starting times.

Following is a schedule for future Golf Club monthly tournaments:

April 12-13, Bonita

May 24-25, Rancho Bernardo.

June 21-22, Cottonwood

July 5-6, Coronado

Aug. 30-31, Torrey Pines

Sept. 27-28, Whispering Palms

Oct. 11-12, Rancho Bernardo.

Nov. 22-23, Tijuana

MONDAY DEADLINE FOR VEGAS TRIP

Monday (March 24) will be deadline on reservations for a CRA-sponsored Las Vegas tour to be held March 28-30.

Cost including round-trip bus transportation will be $35, based on double room occupancy, plus $9.50 for an optional midnight show at the Stardust Hotel.

Tour members will spend two nights at the Westward Ho Hotel and have meals at the Thunderbird.

The tour bus will leave CRA Clubhouse at 5:15 p.m. March 28 and leave Las Vegas for the return trip at 2 p.m. March 30.

Phone CRA, ext. 1111 KM, for additional information.

Meetings Will Detail Plans for CRA Tours

Details on CRA-sponsored tours to three different parts of the world will be discussed in meetings tonight (March 19) and next Wednesday evening (March 26) in the CRA Clubhouse.

Plans for a 22-day European tour will be covered in the meeting at 7:30 p.m. today.

Information on a two-week Caribbean tour will be presented at 7 p.m. March 26 and on one or two-week Hawaiian tours at 8 p.m. March 26.

Information on the tours also can be obtained by calling CRA, ext. 1111 KM.

WOMEN RUNNERS RECEIVE AWARDS

CRA Health Club has presented certificates of merit to three women runners — Margie Nelson, Ruth Wallace and Joanne Schneider — for having run more than 100 miles in the club's physical fitness program.

"SHOES OF FISHERMAN" TICKETS ON SALE

Reduced-price tickets for the 8 p.m. March 30 showing of "Shoes of the Fisherman" at Cinerama Theatre are on sale at $2 each at all CRA outlets.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is March 25. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting tonight (March 19), 7:30 p.m. Color film program. Borrego Desert backpack, March 22-23.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park

BICYCLE CLUB—50-mile San Diego Bay ride, March 22. Meet 7:30 a.m. near Ford Building, Balboa Park.

BONAIR FLYERS—Meeting April 1, 7:30 p.m. Yucca Valley and Giant Rock fly-in, April 13. Private pilot ground school to begin April 11.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meetings Tuesday and Thursdays, 7-10 p.m.

CHORUS—Rehearsals 7:30 p.m. Wednesdays.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m. YWCA, 10th & C Sts.

GARDEN CLUB — Meeting April 2, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Monthly tournament March 22-23, Carlton Oaks Country Club.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

HI-FI MUSIC—Gaylord Carter at the Pipe Organ, Fox Theatre, March 25.

ICE SKATING—GD family skate night Thursday, 6:15 to 7:45 p.m., Mission Valley Ice Arena. Big Bear weekend, March 21-23.

JUNIOR SCIENCE—Workshop March 21, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA, Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot San Diego Police Range, March 23, 9 a.m.

RADIO CLUB—Meeting March 20, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m. Radio communications for Borrego off-road races, April 19-20.

RIFLE CLUB—Senior shoot March 26, 7:30 p.m., Gillespie Field Range.

SAILING — Meeting March 26, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting April 1, 8 p.m., South Bay Club.

STAMP CLUB—Meeting March 27, 7 p.m.

TENNIS—Novice women's singles tournament March 22. Mixed doubles March 29.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS — Hawaiian tour March 20-April 5. European tour, May 17-June 7; itinerary meeting tonight (March 19), 7:30 p.m. Las Vegas tour, March 28-30.

TRAILERS — Meeting April 1, 7:30 p.m.

VOLLEYBALL—Teams now forming. Practice Wednesday, 7-10 p.m., Federal Bldg., Balboa Park.

WIVES—Potluck luncheon, March 26, 10:30 a.m. crafts and handwork, luncheon at noon.

WOMEN'S GOLF—Singing Hills Pine Glen course, April 12, 9:30 a.m.

Skaters Reschedule Big Bear Weekend

Because of the heavy snowfall last month in the Big Bear area, the Convair Ice Skating Club Winter Weekend scheduled for Feb. 28-March 2 was postponed.

According to Commissioner Bud Davies, the trip has been reset for this weekend, March 21-23.

First space will go to those who had initial reservations but some openings may develop because of late cancellations. Names will be accepted for a standby list.

Cost of the weekend outing is $15 per person with children under 8 going half price.

Call Davies or Penny Serbousek at LF ext. 2283 or Joan Kosen, 274-5227 or 453-0530 for information.

'Bonanza' at Boron Rockhounds' Target

CRA Rockhounds are slated to attend Mojave Mineralogical Society's Annual Boron Rock Bonanza at Boron, Calif. March 29-30.

The Boron site, located between Mojave and Barstow, is a dry camp and members and guests are cautioned to bring wood, water and provisions. Warm clothing is also advised.

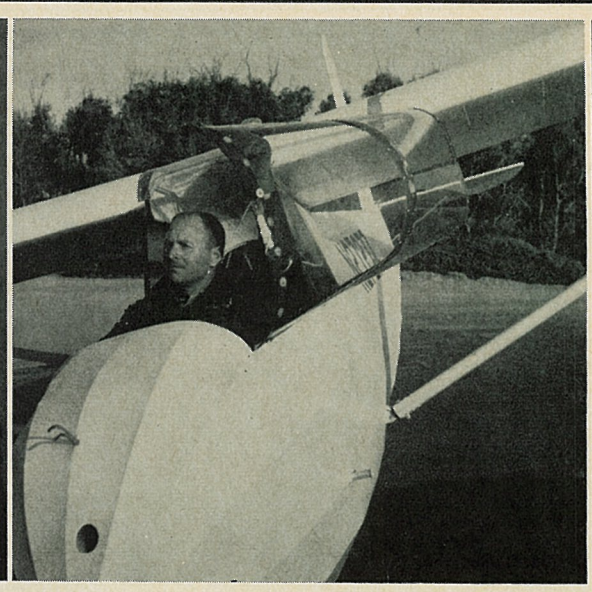
For information call Verb Echols at 445-3386.

Underbrush Winner In CRA Fast Break

Pulling ahead in the last two minutes of the game, Underbrush defeated the 595 team 53-45 to win first half championship in CRA fast break basketball.

The one game playoff resulted after both teams finished first half play with 5-1 records.





TWO CHAMPS—At left is Walter Mooney, Convair Dept. 597-1, who won overall first place award in annual Pacific Coast Midwinter Soaring Championships at Torrey Pines gliderport. At right is Ted Schirtsinger, Dept. 401-2, who kept his glider aloft for six hours, 49 minutes to win endurance trophy.



LONG TRIP HOME—Frank Sladek of Convair's Dept. 401-1 and Hilda, his three-year-old bird dog, are back together after Hilda made five-day, 120-mile trip home from Imperial Valley, on her own.

Resourceful Dog

Hilda's 5-Day Disappearance Climaxed by Happy Reunion

Chances are Hilda has forgotten her ordeal by now, but it remains fresh in the mind of her master, Frank E. Sladek Jr., Dept. 401-1 plaster pattern maker at Convair's Lindbergh Field plant.

It happened the last weekend of pheasant hunting season when the three-year-old German shorthair became separated from Sladek while hunting near Seeley in the Imperial Valley.

"We were hunting with friends and had shifted to a new location, with Hilda riding in another car. Evidently, when she couldn't find me at once, she took off on a search and disappeared."

Instead of hunting pheasants, Sladek hunted Hilda — for two fruitless days.

"I must have talked to every farmer within a five-mile radius," he recalls. "It almost broke my heart. I thought she was gone for good."

As it turned out, Sladek didn't have to worry. Hilda wasn't about to give up.

Five days later and eight pounds lighter, Hilda reappeared at the Sladek home near El Cajon. Apparently she had covered the 120 miles on her own in a modern "Lassie Come Home," episode.

It was a happy reunion, not only with her master but with the Sladeks' five children, and two puppies of her own, left from a litter of eight.

"Actually, 120 miles was not far for her to cover in five days," Sladek said, pointing out that hunting dogs have tough feet and cover at least 40 times as much territory in the field as the hunter.

Sladek has not discounted the possibility that someone picked up Hilda and brought her back to San Diego County — but that seems unlikely.

Sladek, a Convair employe 13 years, is an avid sportsman, hunting almost every weekend from September through mid-January and at least one weekend out of six the rest of the year.

He hunts ducks, geese, quail and pheasant in the Imperial Valley, deer in the San Diego County mountains, bear and tree squirrels in Siskiyou County in Northern California, and bobcats during the off-season.

He also builds custom rifles and makes his own duck and geese decoys as spare-time hobbies.

Weight Engineers To Meet May 5-8

Two major professional engineering conferences will be held in California during May and June.

The Society of Aeronautical Weight Engineers' annual meeting will be in San Francisco May 5-8.

The 1969 Cryogenic Engineering Conference will meet in Los Angeles June 16-18.

Radome Passes Inspection of DCAS Team

The Convair-built radome for the Standard Arm Missile has successfully passed the government's First Article Production Inspection (FAPI).

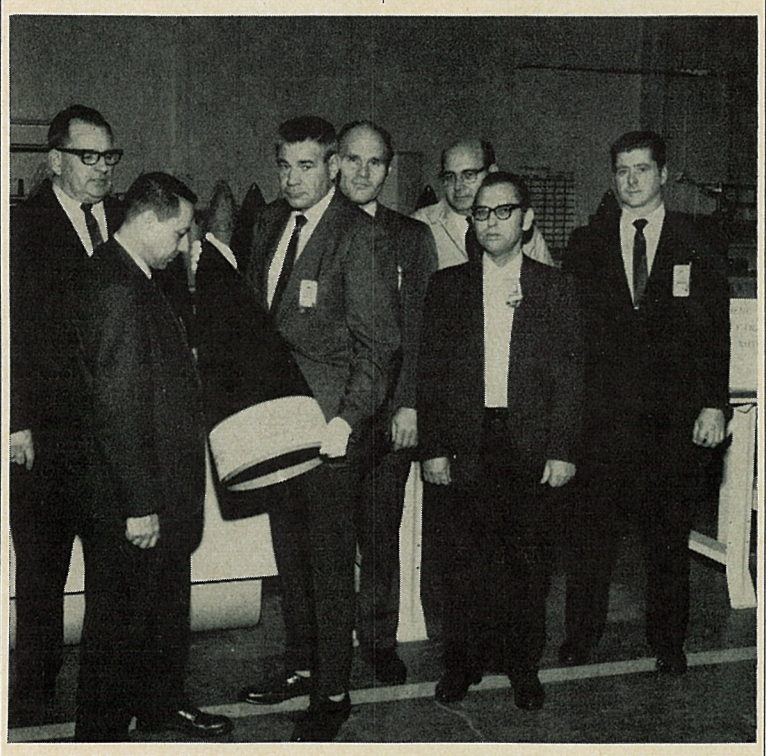
According to Jay Farrar, operations program manager for the radome production program, the successful completion of the inspection "demonstrates that we have met the technical and manufacturing requirements for production of the radome."

The inspection took the radome through all phases of production from receipt of raw material to final delivery.

Included in the inspection party were regional representatives of the Defense Contract Administration Services who conducted a quality audit of the FAPI procedures.

The radome is being produced by Convair for Pomona division, prime contractor for Standard Arm.

R. A. Dietz, Dept. 514-0 is Standard Arm program manager for Convair. The radome was manufactured under the supervision of W. R. Walker, Dept. 454-0.



RADOME INSPECTION—General Dynamics and Defense Contract Administrative Services representatives look over radome for Navy's Standard Arm Missile on recent First Article Production Inspection. From left: J. W. F. Dell and H. R. Rosen, both of DCAS Region—Los Angeles; M. R. Conklin and J. F. Harrison, both of DCAS plant rep. office at Convair; O. A. Bonnema, R. L. Lucas and J. L. Winger, all of Convair.

Smooth Ride

Engineer Designs Airplane Using Volkswagen Engine

Convair's Bill Evans, a design specialist in Dept. 512 at Lindbergh Field, claims some of those VWs really can fly. He should know because he has put one of them in the air — an all-wood miniplane with a Volkswagen engine.

The tiny aircraft, which is 18 feet long and has a wingspan of 24 feet, can be seen almost any weekend at Ramona airport, where it is being flight tested by another Convair man, predesign engineer Walt Mooney, Dept. 597-1.

Bill says he has been air-minded all his life, but that it took a casual remark by his wife, Margaret, to "start some kind of project" that sent him to the drawing board. He said it took him two years to design the plane, but only one year to construct it in the garage of his home.

The French started the fad of using VW auto engines in small planes shortly after World War II, Evans said, because of the vast number of vehicles left behind when the Germans retreated. However, he said the fad was slow catching on in the states.

The VW 40-horsepower engine requires very little conversion work, Evans said. The task essentially involves merely adding a prop and magneto. Weight of the all wood (spruce and marine plywood) craft is 440 pounds, empty, with a top speed of 90 miles per hour. It has a landing speed of 45 mph and can climb at the rate of 400 feet per minute.

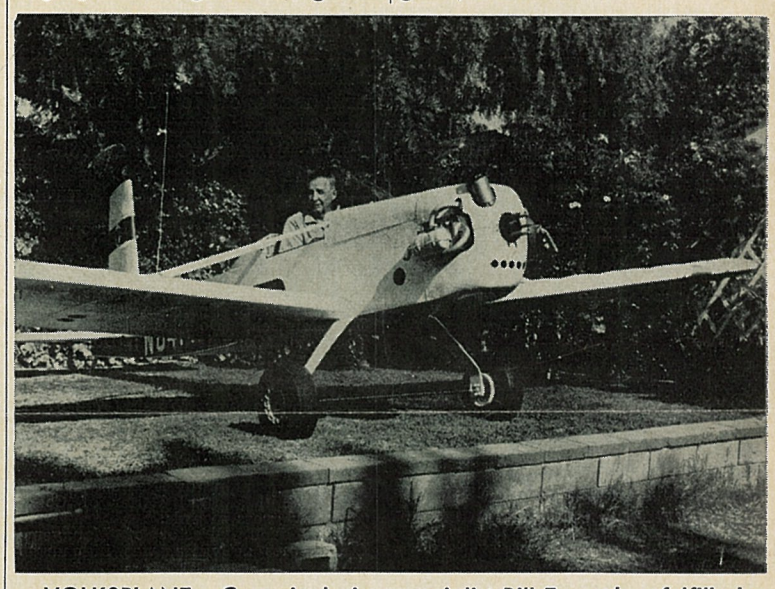
"You can't beat it for economy," Bill says of his "flying bug." It uses only 2.5 gallons of regular auto gas per hour.

And it gets another tribute from Mooney, who has 1,500 hours of flying time. He says it is the smoothest engine he has ever flown. Evans, who has piloted only gliders, also plans to test his creation soon.

Biggest construction obstacles, he said, were chasing down hardware and materials. He finished the plane in September of last year and the plane now has six hours of flight time. FAA test regulations require that the plane fly at least 50 hours within a 25-mile radius of the home airport before it can be flown elsewhere.

Evans says he and Mooney hope to have the 50-hour requirement completed in time to participate in the Experimental Aircraft Association's annual "Fly-In" at Rockford, Ill., in July of this year.

Plans for amateur building of the aircraft will be released upon completion of the flight test program, Bill said.



VOLKSPLANE—Convair design specialist Bill Evans has fulfilled a lifelong ambition by designing and building his own airplane, an all wood monoplane driven by a 40-horsepower VW auto engine. It has a top speed of 90 miles per hour.

Convair Tests Disclose Best Circuit Board Drilling Speed

A comprehensive 15-day test program by Convair division has led to determination of the most effective numerically-controlled drill speed and feed rate for drilling multi-layer printed electronic circuit boards.

Most effective speed was found to be 80,000 rpm and feed rate to be 180 inches-per-minute, regardless of the size of drill being used.

Douglas Mayberry, Convair Dept. 491-0, senior manufacturing development engineer in charge of the test program, said use of the optimum speed and feed rate for circuit board drilling on future large-production programs can eliminate both friction-generated heat conduction that creates "epoxy smear" and distortion caused by chips that are too small or too large.

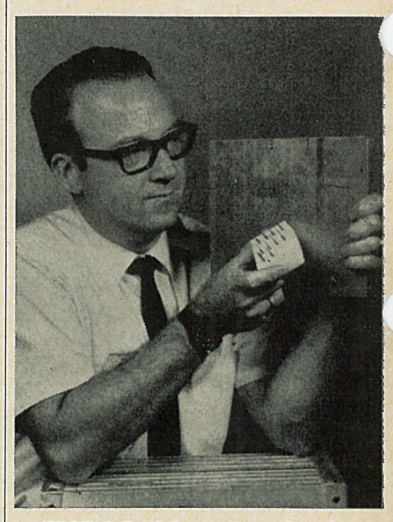
Convair obtained use of a special Elpac Controls drill — the only one of its kind — for use in the precision drilling tests. The drill has a synchronous motor with a granite-bar-supported air bearing spindle for resolution accuracy to .0001-inch and with speeds to 100,000 rpm.

Precision carbide .0135 to .125-inch drill bits were used for the tests on standard copper-coated Micaply G-10 eight-layer circuit boards bonded by a heat-sealing epoxy resin.

Hal Reavely and Blake Barton of Convair's motion pictures and TV section used a special Beckman Whitley Dynaflex camera and automatically controlled flashing strobe lights to photograph chips being expelled.

Viewing the film frames in sequence enabled engineers to watch each revolution of the drill bits and the action and "flow" of chips being expelled at various speeds and feed rates.

Photomicrographs were made of wall sections of the drilled holes, magnified at up to 250 times.

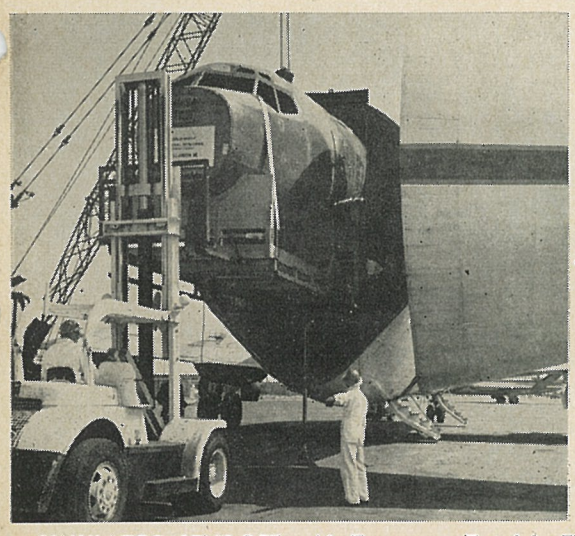


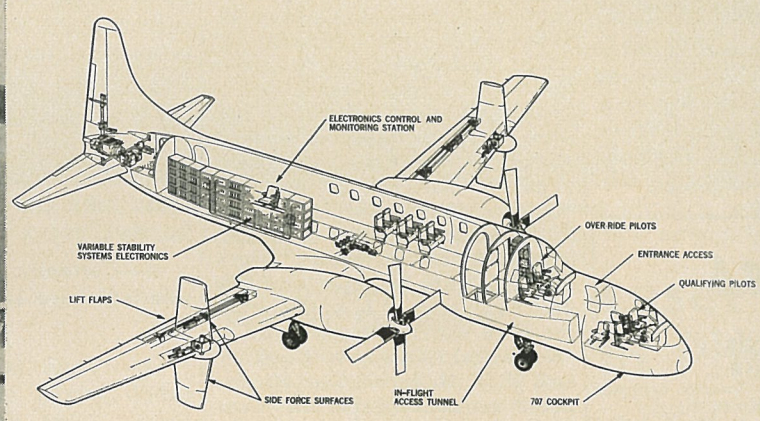
TEST BOARD — Douglas Mayberry, Convair senior manufacturing development engineer, displays section of multi-layer printed circuit test board and drill bits used in test program to determine most effective drill speed.

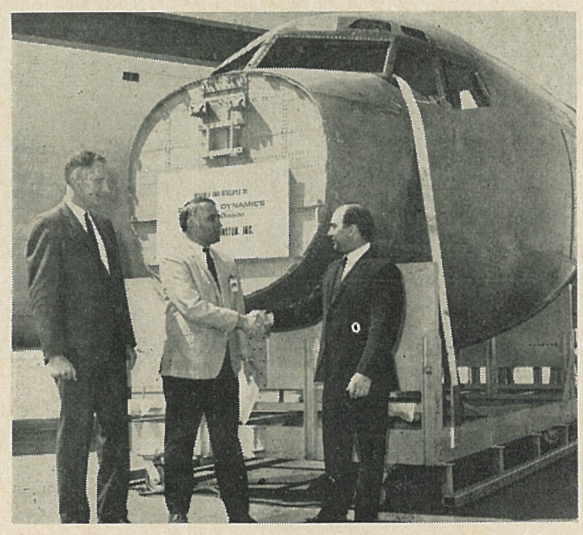
SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 7 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 2, 1969







SIMULATOR SENDOFF—Air Transport/Total In Flight Simulator nose section produced at Convair was delivered to Tex Johnston Inc. in ceremony March 19 at Lindbergh Field. In left photo, simulator nose is loaded aboard Aero Spacelines Mini Guppy; center drawing shows how 707 nose will be mated to Convair 580; at right, Joe Andrews, left, vice president-sales, and Van Shepard, vice president-TIFS operations, both of Tex Johnston Inc., accept delivery from Frank Signorelli, Convair program manager. Simulator, attached to Convair 580, will be used to train commercial pilots under flying conditions.

Flight Simulator Nose Flown Away by Guppy

The unique Convair-built Air Transport/Total In Flight Simulator (AT/TIFS) was delivered last month to Tex Johnson Inc. of Santa Barbara, Calif.

It was flown to Santa Barbara from San Diego by a "Mini Guppy" transport plane.

Constructed from the nose section of a damaged Boeing 707, the simulator prototype will be attached to a Convair 580 and used to train commercial pilots under actual flying conditions, according to Frank Signorelli, Convair AT/TIFS program manager.

Convair's $2.5 million contract included design, fabrication and production of the prototype.

As designed, the TIFS will be an economic boon to commercial airlines in their training programs. The modified Convair 580 can be operated at a significantly lower cost while freeing the airline's own carriers for revenue producing operations.

AT/TIFS is designed to exhibit stability and control characteristics of other aircraft, responding to pilot controls exactly as the simulated aircraft would (in this case a Boeing 707). Tex Johnson Inc. plans future simulators for DC-10, L-1011, VC-10, 747, SST, Concorde and other aircraft as they are developed and produced.

During flight, trainee pilots in the TIFS actually fly the Convair 580 with TIFS's 707 controls and instrumentation. Pilot actions are fed through a computerized control system aboard the plane. This system causes the 580 to react with authentic 707 characteristics.

Over-ride pilots in the Convair 580's normal cockpit monitor and

(Continued on Page 2)

'Delivery' Double For TIFS Manager

The AT/TIFS wasn't the only March "delivery" for Convair's Frank Signorelli.

On March 16 he became the father of a 7 lb. 8 oz. boy, his third son. The child was named Frank Jr., following Italian custom which calls for the first two sons to carry names of their two grandfathers. Signorelli has one daughter.

Disneyland Ticket Sell-Out Expected

Sales for the April 12 Disneyland party for General Dynamics employes and their families will close at noon Thursday, April 10.

Don Evanson, planning committee chairman, said he expects a sell-out and urged employes not to wait until the last minutes for tickets.

Tickets are $3.75 per person for unlimited use of all rides and attractions from 8:30 p.m. to 1:30 a.m. Round trip bus tickets are available at $3.50 each. Parking will be 50 cents per car, payable at the parking entrance.

Design Review Program Established For DC-10

A continuing design review program has been instituted in Convair's DC-10 project to insure that parts going into fuselages for the big tri-jets will be engineered to meet all requirements during the original design and to insure that all parts can be produced at lowest possible cost.

F. D. Applegate, director of product design, said extensive savings are expected through reduction of engineering change orders. Work of the design review boards also will help insure that every part will fit and function properly in its final assembly.

Each of the review boards, established under provisions of the Convair Integrated Management System, is composed of representatives from various engineering, production, and quality control disciplines.

Proposal design, contract award, layout design, offboard (detail) design, tool design, and first article inspection reviews are included in the system.

Responsible design and group engineers present detail and assembly drawings for evaluation in each of the offboard design reviews. Other members of the board who help to detect possible problem areas before the drawing is released include stress, weights, tooling, manufacturing, materials, value engineering, parts engineering, and quality control personnel.

D. B. Suggs of the DC-10 project office schedules the reviews and serves as meeting chairman.

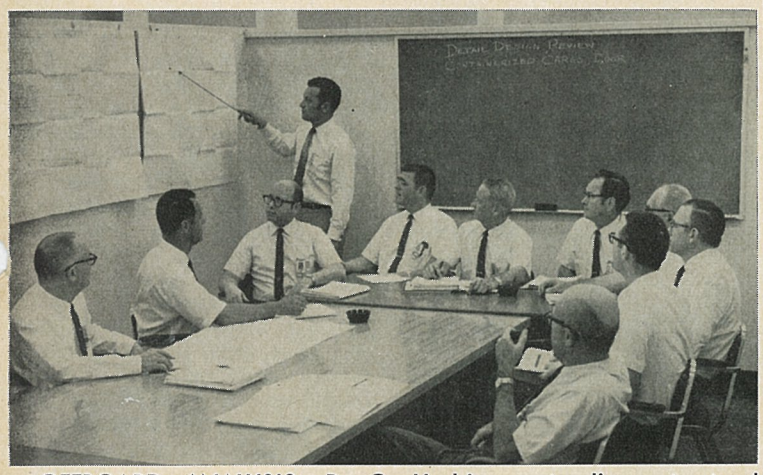
"First article" design reviews are conducted to insure that prototype castings, forgings, machined parts and other critical hardware meet all requirements before the first production lot is manufactured.

In the initial "first article" review last month, a tiny casting for a DC-10 cargo door switch striker from a casting supplier was checked by the six-man first article review board.

After finding it to meet all metallurgical and engineering drawing requirements, the board notified the vendor of only one discrepancy — it had not been stamped with a part number.

Receiving inspection and quality control personnel check incoming "first articles" before the review board meeting is scheduled by the responsible design group engineer.

Members of the first article review board, in addition to the design group engineer, include a quality control engineer, a tooling engineer, a liaison engineer, a stress engineer, and a producibility engineer.



OFFBOARD ANALYSIS—R. C. Harbison, standing, structural design group engineer, presents detailed drawing of DC-10 containerized cargo door for analysis by offboard design review board. Others, from left, are H. B. Riggs, reliability-maintainability; Bob Hinck, value engineering; M. H. Caldwell, Douglas Aircraft Co., engineering; R. M. Cash, structural design; D. B. Suggs, project engineering (chairman); E. E. Farthing, production engineering; E. V. Minch, manufacturing; J. W. Richardson, weight engineering; Hugh McCutchen Jr., structural analysis; Bill Pickens, specifications compliance and parts engineering.

Three OV1 Satellites Gathering Space Data

Convair division-built Orbital Vehicle 1 satellites 17, 18 and 19 were launched into near-polar orbits March 17 after being lifted into space from Vandenberg AFB atop Atlas booster 104F.

Forty experiments to give scientists a better understanding of space environment and its effects on materials were carried into orbit aboard the three satellites and one other on the OV1-17 propulsion module, which was utilized as a spacecraft after separation from its satellite.

L. E. Ottem, Convair OV1 program manager, said the satellites were fired into near-perfect orbits by their propulsion module solid-fuel engines.

The Air Force Office of Aerospace Research mission was the first launch using three OV1s under the same heat-shield fairing and first use of an OV1 propulsion module as an experiment-carrying spacecraft.

Shortly after liftoff from complex A-2 at Vandenberg, the Atlas performed a roll and yaw maneuver to prepare it for releasing the three satellites on near-polar trajectory at 250-nautical-mile ballistic apogee.

OV1-19 was separated from the Atlas 13 seconds after sustainer engine cutoff and OV1s 17 and 18 were released simultaneously one second later.

After being released in space, OV1s 17 and 18 coasted 5 minutes 40 seconds while performing roll, pitch and yaw maneuvers for correct alignment. Then they were accelerated to orbital velocity by propulsion module engines and the satellites separated.

Both are gravity gradient stabilized by Convair Vertistats. OV1-17 is in a 214 to 256-nautical-mile orbit; OV1-18, a 249 to 316-nautical-mile orbit. OV1-17 is

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Mason to Head 'Communication'

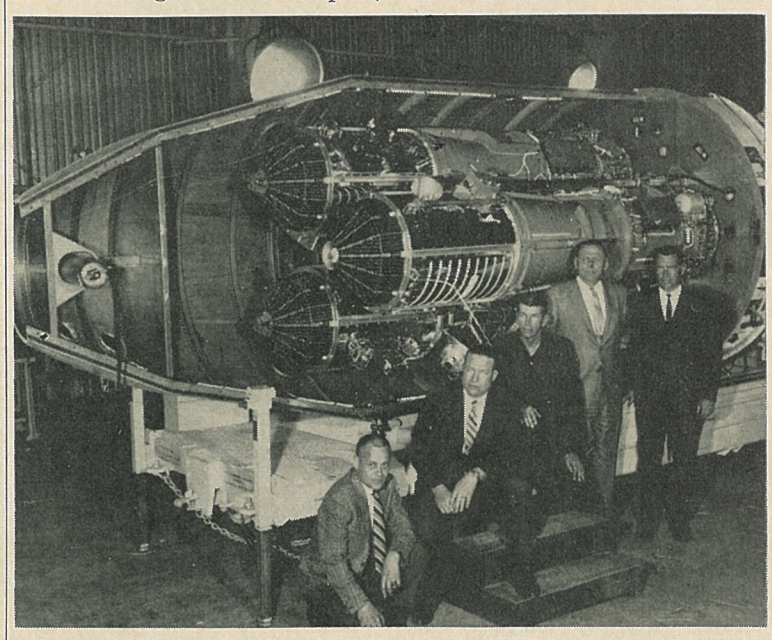
James H. Mason, manager of General Dynamics' Los Angeles field office since 1963, has been appointed director of communication (Dept. 100-1) for Convair division. He reports to Jack L. Bowers, general manager.



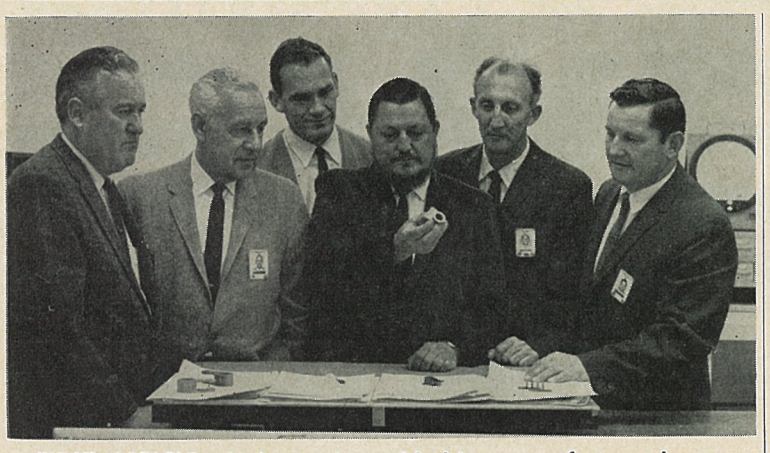
James Mason

The communication organization will provide all public and community relations services for the division, including customer presentations,

(Continued on Page 2)



TRIPLE-HEADER—Three Convair-produced OV1 satellites are shown at Vandenberg AFB, enclosed in one half of their heat-shield fairing, prior to their March 17 launch. In foreground, from left, are Lou Orosz, Convair OV1 test conductor; Charles Gilbreth, Lockheed; Allyn Hazard and William Huntley, Naval Research Laboratory; Roger Lynch, Convair's Vandenberg operations manager. Gilbreth, Hazard and Huntley are from organizations with experiments aboard the satellites.



FIRST ARTICLE—Little casting with big name for use in cargo door switch striker assembly was first article for DC-10 reviewed last month by newly established first article design review board. Viewing part, from left, are R. E. Burns, producibility; Earl Wesp, tooling; John Stitt, structural analysis; Pete Nagy, design engineer; F. R. Porter, quality control; Buck Yerebeck, liaison engineer.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between March 16 and March 31.

Thirty-five year: Dept. 002, A. Stieringer.

Thirty-year: Dept. 210, A. Minella Jr.

Twenty-five year: Dept. 019, A. L. Fuller, P. R. Jones; 031, F. J. Hudec; 059, E. B. Aus; 780, Beatrice M. Blomke; 831, W. C. Hunt; 833, J. E. Greenfield Jr.

Twenty-year: Dept. 045, R. M. Seiveno; 143, J. M. Davis; 420, Gladys D. Raynaud; 595, D. W. Sonheim; 831, Doris S. Passenheim; 833, W. M. Warren; 835, Reba H. Kellison.

Fifteen-year: Dept. 015, R. Raitt; 101, W. B. Strong; 170, Mary M. Thorp; 193, Alta C. Ecelberry; 196, Erma M. Tuite; 250, J. W. Bradley, E. C. Graham; 524, E. Fisher, Grace C. Simpson; 756, R. L. Essley, R. Rogel; 780, R. B. Clark; 810, Marion E. Ward; 833, K. W. Draper.

Ten-year: Dept. 015, W. E. Hicks; 019, G. E. Lopez; 101, L. M. Hudson; 102, Anne M. McCain, D. W. Warner; 113, Irene S. Sandberg; 143, C. Jones; 145, R. L. Logdon; 198, F. L. Patton; 202, M. R. Gutzka; 250, L. Lee; 400, Marjorie K. Quijada; 402, Lillian C. Silkwood; 515, Pauline A. Thompson; 518, F. Arena, Emma Packard; 524, Sally F. Beaulieu; 532, W. F. Holzer; 533, R. J. Chiuzels; 566, B. J. Griffin; 572, G. L. Hill; 574, A. M. Dykhouse; 591, J. C. Moore; 732, R. E. Latta; 756, J. G. Kallmeyer; 761, J. Rowell; 780, Shirley A. Jones; 831, J. D. Rogers; 834, Betty M. Smith; 952, R. E. Anspach; 979, R. R. Cass Jr., H. Eskesen; 985, R. A. Tucker.

ELECTRONICS

Twenty-five-year: Dept. 465, T. B. Woodruff; 582, J. A. James.

Fifteen-year: Dept. 581, C. C. White.

Ten-year: Dept. 203, M. M. Fleming; 391, Joanne M. Vance; 614, A. G. Gonzalez.

Invention Disclosures

CONVAIR

ADSIT—N. R., W. E. WITZELL, Dept. 572. Improved Transverse Tensil Strength of Composites.

BOYCE—W. E. L., Dept. 550, P. H. WILLIAMSON, Dept. 551. Magnetic Fusing of Weapons at Release.

COWARD—K. S., Dept. 581. Hydrodynamic Concept for Water Vehicles.

ROLLA—C. P., Dept. 491. Reamer Drill.

VARIAS—M., Dept. 572. High Modulus Graphite Fiber Reinforced Hybrid Laminates.

Retirements

CONVAIR

COOK—Chester S., Dept. 565-1. Seniority date Oct. 15, 1956, retired March 11.

DAVIS—Harvey R., Dept. 985-3. Seniority date Sept. 23, 1959, retired March 1.

PAGANI—Joseph A., Dept. 027. Seniority date Oct. 5, 1965, retired March 21.

SALLEY—Harold E., Dept. 149. Seniority date March 12, 1957, retired March 17.

STINSON—Dorothy M., Dept. 101-2. Seniority date Sept. 23, 1953, retired March 7.

WHITE—Gordon E., Dept. 250-6. Seniority date June 4, 1954, retired March 7.

Deaths

ADDLESON—Harry A. (retired Oct. 5, 1962), died Feb. 21, 1969; survivors include wife, Anne E.

GILFILLAN—R. D., Dept. 543-2. Died March 19. Survivors include his wife, Barbara Jean, and sons, Clifford, Kenneth and George.

GUYNE—Henry C. (retired May 22, 1962), died Feb. 22, 1969; survivors include wife, Mabel.

KEEFER — William C., Dept. 545-3. Died March 19. Survived by his wife, Sarah and a son.

KROSCH — D. K., Dept. 141-4. Died March 10. Survived by wife, Catherine and sons, Donald and Calvin.

WHORTON—Danny, Dept. 031, died March 10; survivors include wife, Mary.

Awards

CONVAIR

Employe Suggestion Awards approved for the week ending March 21.

Dept. 045, E. F. Alcala, M. M. Lonez, $18.70 each (joint award); 015, M. A. Ambrose, $1,107.10; 020, V. H. Ammons, $15; 574, A. Aron, $54.30; 059, T. T. Austin, $15; 250, D. Belchamber, M. E. Nicolet, W. White, $5 each (joint award); 985, V. D. Brose, $25; 027, D. L. Clark, $18.50; 027, J. E. Conklin, $24.10; 002, J. Doig Jr., $15; 143, F. L. Estevane, $15; 059, D. Gabaldon, $75; 250, B. L. Gammon, $88.80; 507, J. B. Gardner, P. Rowland, $57.90 each (joint award); 985, A. B. Hyland, J. C. Pfeil, $7.50 each (joint award); 015, A. D. Kirkpatrick, $196.50.

Dept. 015, J. P. La Lanne, $15; 507, R. H. Lewis, $15; 144, W. G. Lux, $53.40; 019, F. Malcangio, $15; 761, W. L. McDougal, $15; 143, J. B. Miller, $98.90; 143, L. Ortiz, $15; 002, O. D. Phillips, $15; 015, W. L. Porter, $15; 579, O. W. Potter, $17.80; 019, P. W. Quade, $414.90; 979, N. M. Robinson, $155.60; 979, F. M. Russell, $15; 143, M. B. Sponsler, $15; 059, B. Steutel, $15; 027, F. H. Stine, $131.70; 027, A. Strakbein, $16.30; 985, I. J. Suprinski, $187.10; 001, W. A. Swanson, $24.10; 985, E. M. Van Huss, $15; 027, J. A. Wilcon, $53.80; 566, L. J. Wright, $15; 975, J. Zorman, $107.60.

Employe Suggestion awards approved for the week ending March 14.

Dept. 027, K. T. Banks, $15; 544, T. L. Bartley, $15; 250, K. E. Canaan, $15; 250, C. W. Carlson, $26.40; 153, G. D. Clark, $15; 027, R. E. Cloud, $82.50; 027, D. D. Danforth, T. L. Wright, $22.50 each (three joint awards); 130, N. Freeman, $15; 985, J. D. Hamner, $15; 532, B. L. Henry, $50; 027, R. T. Judd, $30 (two awards); 143, D. E. Needham, $15; 027, D. R. Noon, $15; 979, D. L. Olson, $15; 001, M. J. Russell, $15; 541, A. Sansone, $82.10; 027, F. J. Serio, $131.60; 027, J. A. Wilcox, $97.30; 780, M. W. Zink, $15.

Papers Presented

CONVAIR

Papers to be presented at professional meetings this month.

CHRISTIAN—J.L., 572-1. "Recent Developments in Filament Reinforced Metal Matrix Composite Materials" to APRA Symposium on High Performance Composites, St. Louis, Mo., April 8-9.

GIESKE—R.K., Dept. 585-0. "Frequencies and Mode Shapes of a 100-ft. Space Erectable Parabolic Antenna" to ASMS/AIAA/10th structures Structural Dynamics and Materials Conference, New Orleans, La., April 14-16.

Rider-Driver

CONVAIR

RIDE OFFERED—From Magnolia and Main Sts., El Cajon, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call James Abernethy, Ext. 481 LF.

RIDE OR CARPOOL WANTED—From Encanto to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Jerry Phillips, 264-0078.

RIDE WANTED — From Lakeside to Kearny Mesa plant, 7 a.m. to 3:30 p.m. shift. Call Kathleen Freeman, ext. 1113 KM or (home) 443-6435.

Personals

CONVAIR

To all Convair friends of Henry Gallant: I shall never forget the kindness of all of you, ever.

Mrs. Henry Gallant

* * *

Thank all of you for the beautiful floral spray you sent to my dear husband, Schack Brown.

Mrs. Meita Brown and family.

* * *

I wish to express my thanks for the help received during my wife Fern's illness and major surgery. I particularly want to thank the Con-Trib-Club for the financial assistance.

H. R. Blevins
Dept. 130-1

* * *

I wish to express my appreciation for the cooperation received from campers during my 3½ years as manager of CRA's Pine Crest resort.

Jack Clendenon

* * *

I wish to thank my many Convair friends for the many cards and flowers during my recent illness.

E. Barbour, Dept. 250-5

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Convair's Tom Potts To Show Paintings

Watercolor paintings by Thomas Potts of Convair's Dept. 420-4 will be exhibited April 11-20 at La Jolla Art Association Gallery, 7917 Girard Ave.

Landscapes of the Southwest, scenes from New England, and a special collection of San Diego County historical landmark paintings will be included.

Annual Quality Seminar Held

General Dynamics was well represented at the eighth annual seminar of the San Diego section of American Society for Quality Control held at the University of California-San Diego.

R. H. Nicholson, Electronics-SD manager of quality control, was seminar chairman and delivered opening remarks.

L. I. Medlock, director of reliability control at Convair division and vice president of ASQC, delivered a talk on training before a general meeting.

At the various specialized sessions, R. H. Gilliland of Convair moderated one session; C. G. Franklin delivered a paper on "Calibration effect on End Item;" R. H. Miller, director of quality assurance at Stromberg DatagraphiX, gave a paper on "Product Evaluation;" J. A. Riegert of the Fort Worth division spoke on "Numerical / Adaptive Controls" and W. T. Hollar of Convair prepared a standby paper on "Communications Requirements for Customer Satisfaction."

General Dynamics personnel acting as seminar officers in addition to Nicholson were R. H. Sparks of Stromberg DatagraphiX and C. L. Amaral of Convair.

Bowers Keynoter For NMA Meet

Jack L. Bowers, Convair general manager, will be keynote speaker at an all-day National Management Association regional conference April 26 in the Masonic Temple, 1895 Camino del Rio, San Diego. He will discuss "management obsolescence" and its effect on industry.

Registration will begin at 8 a.m., a film will be shown at 8:15, and the program begins with Bowers' address at 9. Tickets are on sale through all Management Club boosters.

W. E. Magnuson, an NMA national director and chief of special projects in reliability control for Convair, will present a conference "challenge," outlining avenues open to managers to insure against obsolescence.

Other speakers will include Dr. Mario Conforti, PRIDE program executive director from North American-Rockwell Corp.; Dr. Tore Tjersland of the Western Behavioral Sciences Institute; Renn Briggs, NMA national secretary-treasurer.

Simulator Nose Goes By Guppy

(Continued from Page 1)

control the computer system performance and can, if necessary, instantly disengage TIFS and take control of the plane.

Signorelli lauded Convair's AT/TIFS production team for high quality workmanship and for delivering the product four days ahead of schedule. He said significant contributions were turned in by the following: Bill Wenhold, Bob Moore, Ralph Kiger and Joe Szakacs, all of structural design; Frank Pokorny, avionics; Steve Milis, electrical; Lou Fowler and Bob Cox, environmental and hydraulics; Vern Booth and Bob Dithier, auxiliary power systems; Len Koenig, stress; and Ed Hood, weights.

Others included: Bob Fefferman and Joe Jackson, dynamics; Carl Bieberdorf, furnishings; Bill Ebright, lofting; and Jack Hanna, mechanisms.

E. D. Heller Selected For National Honor

E. D. Heller, manager of cost reduction and value control at Convair has been granted the American Value Engineers Honorary Member Award.

The award is given by the Society of American Value Engineers to members of the society "who have made outstanding contributions in the field of value engineering."

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Columns are not being renumbered or relettered after being repainted. This causes employes to give wrong information when reporting emergency locations and new employes have no way of knowing what locations are.

A—Good point. Column identification will be done after repainting in the future.

★ ★ ★

Q—What percentage of the participants in the Savings and Stock Investment Plan have selected "all government bonds?"

A—Currently, eight per cent of Convair participants (hourly and salaried) have selected the "all government bonds" option.

★ ★ ★

Q—What is Company policy regarding inspection of lunch boxes on entering the plant? One guard checks them; most do not. It would help to know whether to have them open or closed.

A—Company policy is for guards to spot-check lunch boxes of employes entering the plant. You may keep them closed unless the guard asks you to open them.

★ ★ ★

Q—Why hasn't flu vaccine been offered to the employes? Incidence of flu was reduced through immunization experiments several years ago.

A—This year's distribution of vaccine for Hong Kong flu was limited by the Health Department to the aged and others with serious health problems. In future years, immunization may be offered if conditions warrant and vaccine is available.

★ ★ ★

Q—Why don't we put drainage holes in the restricted parking lot at Lindbergh Field? Water stands there for days after a rain.

A—An installation of catch basins and drains in this lot would be extremely costly. Because of ordinary infrequency of heavy rains, it has not been deemed advisable. Plant engineering personnel will be assigned to sweep water away as needed in the future to alleviate the problem.

Three OV1 Satellites Launched To Gather Space Information

(Continued from Page 1)

circling the earth every 93.2 minutes and OV1-18 every 95.1 minutes.

OV1-19 had an in-space coast of 7⅓ minutes before it was injected into orbit, "spun up" to nine revolutions per minute for stabilization, and the satellite separated from its propulsion module. It has an orbital period of 154 minutes with a perigee of 250 miles an an apogee of more than 3,100 miles.

The OV1-17 propulsion module, designated OV1-17A after separating in orbit from its satellite, coasted 42 minutes, was maneuvered for proper alignment, and its perigee was lowered through firing of a retro-rocket. It had an initial perigee of 100 and an apogee of 205 nautical miles, with a 90 minute orbital period.

OV1-17A, carrying the Navy's Orbiting Radio Beacon in Space (ORBIS CAL II), was "spun up" nine revolutions per minute for stabilization and was equipped with two radio beacons, two antennas and a battery supply.

Its experiment for the Naval Research Laboratory and Space Experiments Support Program of the Air Force Space and Missile Systems Organization was to operate continuously for nine days or until re-entry and provide information on ionospheric effects on radio communication and radio astronomy.

OV1-17 is carrying 12 experiments for investigation of atmospheric characteristics and space radiation, measurement of electric fields, calibration of meteor trail radar systems, measurement of extra-low-frequency propagation in the ionosphere, investigation of cadmium sulfide solar cell performance, and spacecraft coatings development.

OV1-18 houses 16 experiments for the study of ionospheric characteristics and measurement of electromagnetic interference, charged particles and electric fields.

OV1-19 has 12 experiments, including seven for investigation of space radiation characteristics, very-low-frequency plasma wave characteristics and biologically significant space radiation phenomena.

The Space Experiment Support Program office at SAMSO had responsibility for the launch and development of the OV1-17 support platform.

Mason to Head 'Communication'

(Continued from Page 1)

employe communication programs, and release of information to external media.

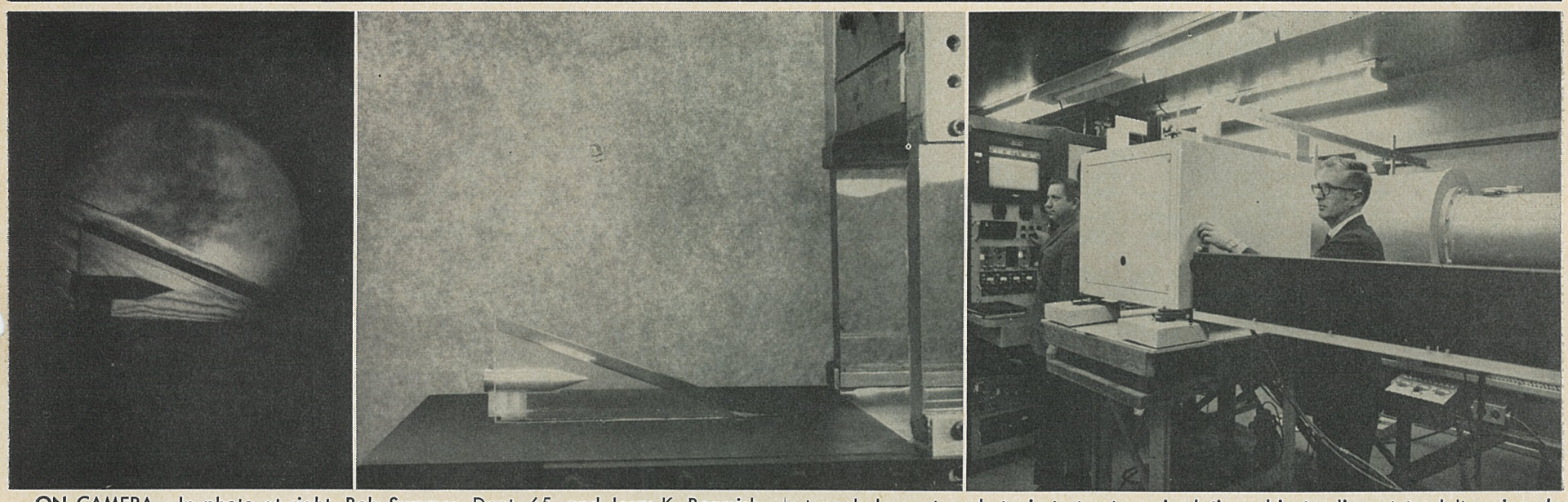
Mason joined the Los Angeles field office staff in 1961 and previously had served 11 years with Convair in advanced projects and experimental flight test engineering.

As a Convair advanced projects engineer from 1955 to 1961, he worked on aerospace plane, nuclear seaplane, Navy re-entry vehicle and similar studies. While with experimental flight test from 1950 to 1955, he assisted with the R-3Y flying boat, Allison Turboliner, T-29 trainer, Convair Model 240 and 340 liners, and other aircraft programs.

Mason attended Tri-State College in Angola, Ind., and, before coming to Convair, was chief flight test engineer for Chase Aircraft Co. in Trenton, N.J., and a senior flight test engineer for Republic Aviation in Farmingdale, N.Y.

LIGHTERS FOR SALE AT CRA OUTLETS

Convair-monogrammed improved butane lighters are on sale at $5 each at all CRA outlets.



ON CAMERA—In photo at right, Bob Summer, Dept. 65, and Jerry K. Beamish, Dept. 63-3, Fort Worth division, prepare to make hologram of airflow in wind tunnel. In center photo is test setup, simulating object adjacent to delta wing. In photo at left airflow pattern is captured on hologram plate.

In Two Hemispheres

Gil Clark Recalls 30 Years Gil Clark Recalls 40 Years

Gilbert D. "Gil" Clark, who has survived so many close calls in two hemispheres that he probably will live forever, retired recently after more than 30 years as a test pilot and marketing manager for Convair and predecessor firms.

A close friend of Generalissimo and Madame Chiang Kai-shek, the late Gen. Claire Chennault, Jacqueline Cochran Odlum, ranking South American military officials whom he taught to fly, and other world notables, Clark's career has been closely linked to aviation since he learned to fly in a World War I-surplus Jenny near Pasadena, Calif.

After washing airplanes in return for flying lessons, Clark "graduated" to flying Western Airlines' Fokker tri-motors. While with Western—1928-34, he had his first accident—breaking a leg when he cracked up in a snowstorm.

Jacqueline Cochran became a friend after flying as one of his passengers and asked him to handle maintenance for her in the 1934 London to Melbourne air race.

"We set up special service bases with tons of equipment," he recalls. "She cracked up in Belgrade and we switched support to Roscoe Turner and Clyde Pangburn."

A fellow Western pilot who had left to fly for Chiang Kai-shek after the Japanese invaded China wrote Clark in 1937 and told him he was "missing out on a lot of excitement."

"The next thing I knew I had a $3,000 check from Chennault with instructions to get there as quickly as possible."

Clark shared an apartment with Chennault in Hankow and had several close calls during airfield bombing raids while flying with the seven-man American Volunteer Group (which included one Dutchman).

He flew the last combat aircraft out of Nanking as the Japanese approached. He had no map and had expected to follow the Yangtze River to Hankow—but found it overflowing and 200 miles wide. He eventually landed out of gas but safe.

Later, at Chennault's request and as the only man available to fly DC-2s, he switched to China National Aviation, taking orders directly from Madame Chiang Kai-shek. "She's one of the most brilliant women I've ever met," he recalls.

After joining Vultee Aircraft as a test pilot in 1938, Clark tested many new planes from the V-11GB2 to the P-66 and A-31C. On one first flight the engine quit and he skidded into a farmer's henhouse, emerging unhurt but well feathered.

Transferred to Brazil to introduce Vultee V-11s, he later taught graduates of the Brazil Air Academy. Many who learned to fly A-31s and A-35s with him are now in high posts. Among them is Gen. Francisco de Mello, former Brazilian air minister.

During his years in Brazil Clark learned Portuguese; married his wife, Mary; had a daughter; suffered a permanent eye injury and almost lost his life when engine failure in a Vultee A-35 forced him down in the jungle.

"Lady Luck has always been with me," Clark commented as he recalled how a U.S. Navy blimp, en route to Rio for repairs, spotted a hole in the jungle foliage, investigated and saw him—totally blind but waving his shirt. A series of operations saved 50 per cent of the sight in his left eye and the other returned to normal.

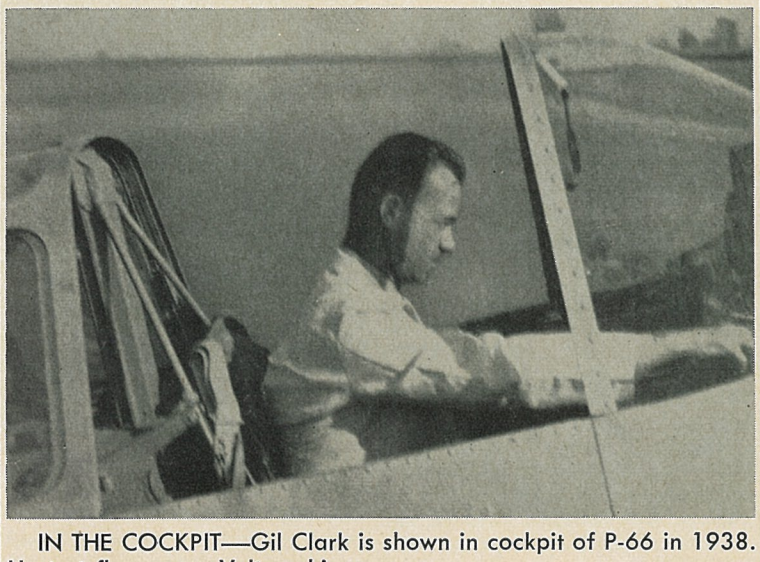
After WWII, Clark handled sales to Stinson division distributorships in South America and South Africa. Later, when Convair entered the commercial aircraft sales field, he established its South American sales headquarters in Rio.

"We sold our first Convair 240s in Argentina, then sold 240s, 340s and 440s in Brazil. Our last sales were three 990s for Varig."

He's flown more than a million miles—and on occasion had to swim. When a Pan American flying boat in which he was a passenger crashed and sank in San Juan, Puerto Rico, he was the only passenger to reach shore with his briefcase and passport. His personal parachute, which he had shipped "air express" in a can, also popped up the next day!



ENDING ERA—Gil Clark, who made friendships around the world as test pilot and Convair sales manager, looks over copy of 1938 Vultair magazine which pictured him in Vultee P-66.



IN THE COCKPIT—Gil Clark is shown in cockpit of P-66 in 1938. He test flew many Vultee ships.

Guidelines Set For 'Perfect Secretary'

The perfect secretary was recently described in a U.S. Department of State newsletter:

"She should be young enough to start at the lowest salary, thus leaving room for promotion, but near enough to retirement age so no other office will try to take her away; able to spell the words I use, but not those of anyone else; efficient and accurate enough so she does all my work perfectly, but backward enough so she does not do good work for anyone else; attractive and cheerful enough so she brightens up the office, but not so much that some guy will come along and marry her; sensible enough so that she uses good judgment in all her duties, but foolish enough that—if she does marry—she chooses a man she has to support and so stays on the job."

McCOY ON BOARD OF LAKESIDE HOME

Dean H. McCoy, Convair chief of engineering administration service, has been elected to Board of Directors for Home of Guiding Hands, a home for mentally retarded children, in Lakeside.

NAVAL RESERVE OFFICERS TOUR

Fifteen U.S. Naval Reserve officers from the USS Jason visited Convair recently for a briefing on products and a Kearny Mesa plant tour.

Laser Beam Employed In Photographing Air

Engineers and scientists of Fort Worth division and TRW systems have evolved a method of photographing and viewing wind tunnel airflow in three dimensions.

Hailed as a "significant new advance" in experimental aerodynamics, the process is called holography. It promises a new method of visualizing and analyzing airflow over aircraft in regions largely inaccessible using existing techniques.

Briefly, the process works like this:

A photo-sensitive glass plate is placed outside one of the windows of the supersonic wind tunnel. A TRW systems ruby-laser holocamera is placed outside the opposite window.

The holocamera divides and processes the laser beam into "scene" and "reference" beams. The scene beam passes through the wind tunnel and falls on the photographic plate. The reference beam follows an undisturbed path to the opposite side of the tunnel and also falls on the plate.

Air density variation of an object in a highspeed airflow tends to retard the light rays in the scene beam, thus these beams arrive at the photo plate later than the reference beam rays. The exposed photographic plate—called a hologram—records in detail time delays suffered by scene beam light when compared to the undisturbed reference beam.

Viewed directly, a hologram looks more like an abstract painting than a photograph of air flow over a model.

"However," said Dr. D. M. Gibson, staff scientist in Dept. 62-2, "the entire scene of the model and airflow from holocamera to film plate is reconstructed for viewing or photographing when the hologram is illuminated by a continuous laser beam."

This image, in which variations in air density are made visible as a pattern of light and dark lines, is known as an interferogram. Previously, interferograms were made in wind tunnels as a Mach-zehnder interferometer.

"Mach-zehnder interferograms are two-dimensional and require wind tunnel windows of the highest quality, virtually flawless in composition," said Jerry Beamish, senior aerodynamics engineer in Dept. 63-3.

Holographic interferometry eliminates the need for high-quality window materials by making a double exposure—two holograms on one film plate—in a pre-determined manner. This process is called differential interferometry; the technique involves comparing sequenced holograms to observe the difference or change in the scene between exposures.

"For example," Beamish said, "if the first exposure in the wind tunnel is made without airflow and the second is made with flow, the airflow pattern becomes visible, and the windows are not 'seen', even if of poor optical quality."

This observation inspired Beamish to apply holography to flow visualization in a wind tunnel. He subsequently worked with Dr. Gibson under a joint independent research and development program to investigate uses of holography as a wind tunnel flow diagnostic tool.

Others heavily involved in the experiments were R. H. Sumner, Dept. 65, and S. M. Zivi and G. H. Humberstone of TRW systems.

"Experiment results prove conclusively that this technique makes visible airflow in corner regions, such as those between an airplane wing and fuselage," Beamish said.

"We can even view internal flow systems such as those around engine-inlet ducts, by using transparent model components of such optically imperfect material as plexiglass."

Beamish came to the division in 1956 after earning his BS degree in aeronautical engineering at Iowa State University. He has been assigned to the aerospace model test group, where he has been doing research.

Dr. Gibson joined the division in 1961, after receiving his doctorate in mechanical engineering from Princeton. He earned his BS and MS degrees from Texas A&M. He has been mainly in the area of plasma physics in the applied research group.

Submarine Sunfish Praised Following Acceptance Trials

Amid praise calling her "one of the finest submarines ever to join the fleet," the nuclear attack submarine USS Sunfish (SSN-649) left the Quincy division to begin her vital role as a member of U.S. Navy operating forces following commissioning March 15.

USS Sunfish earned noteworthy plaudits from members of the Navy's Inspection and Survey team at a critique that followed the ship's acceptance trials last month.

The team reportedly described USS Sunfish as one of the finest submarines in the 637 Class.

They expressed particular satisfaction with the "very apparent extra effort" exerted by the Quincy division in making her a high-quality ship.

Observers from the Navy and other government agencies who rode USS Sunfish during the acceptance trials rated her performance as "outstanding." The performance and operation of equipment were above standards despite the extremely adverse weather conditions caused by a northeast storm, they noted. "The Sunfish," one observer commented, "is a vast improvement over her predecessors."

If one copy is sufficient, why order more?

Sheet Metal Maintenanceman's Rain Pipe Idea Earns $641

A $641.90 Employe Suggestion Award check has been presented to J. T. Taylor, a sheet metal maintenanceman in Convair's Dept. 250-2, for proposing a revised procedure that saved equipment time and manpower when rain water downspouts were replaced on buildings at Air Force Plant 19.

R. D. Leonard, plant engineering general supervisor, said Taylor suggested adding extensions to collector head fixtures at roof level. The downspout pipes then were slipped over the extensions and dropped into place in cast-iron support fixtures near ground level.

Under the original plan, a crane would have been required to support each pipe while tops of the drain pipes were soldered to the collector heads and while at least two support straps were installed to hold each pipe to the building.

"Taylor's suggestion saved 1,625 manhours, eliminated soldering requirements, reduced crane time required, and eliminated possible safety hazards," Leonard said.

As a result of the suggestion, only one maintenance employe was needed to work with the crane operator as the downspout pipes were erected. Two other employes then followed to complete fastening and caulking operations.

Taylor, a 15-year Convair employe, said he plans to use the ES award money on a vacation trip to Oregon in July.



MAINTENANCE AWARD — J. W. Taylor, right receives $641.90 Employe Suggestion Award check and certificate from Dick Leonard, plant engineering general supervisor, and M. L. Goolsby, left, Dept. 250-2 foreman. Taylor suggested adding extensions to collector head fixtures (foreground) to simplify system for replacing downspouts on Air Force Plant 19 buildings.

Three Teams Entered In Women's Bowling

Three teams representing Convair will be entered in the 50th annual Women's International Bowling Congress national championships to be held at University Lanes, April 3 through May 26.

One team recruited from the San Diego plants will bowl at 7 p.m. April 10, while two teams entered from the Convair facility at Vandenberg AFB will bowl at 7 p.m. April 12. This is the first time that the WIBC tournament has been held in San Diego.

Bill Chana Appointed To AIAA Committee

William F. Chana, Convair Dept. 102-2, manager of planning (acting), has been appointed to the American Institute of Aeronautics and Astronautics national membership committee.

The committee develops and recommends to the AIAA board of directors policies and procedures relating to matters concerned with membership development and professional relations.

TOOL ENGINEERS HONOR CONVAIR MEN

Two Convair men have been honored by North County Chapter 189 of the American Society of Tool and Manufacturing Engineers.

Frank Eramo, a tool engineer, was named "Engineer of the Year" by the chapter. John Weiland, supervisor for the Lindbergh Field tool manufacturing department, was chosen "Man of the Year."

Eramo, currently in Italy as a manufacturing engineering representative for the division, was selected for outstanding contributions to many recent programs at Convair, according to Frank Kobrich, Chapter 189's new chairman.

Weiland was recognized for his "outstanding work in ASTME." The award was created especially for him.

Apollo Color Slides On Sale at CRA

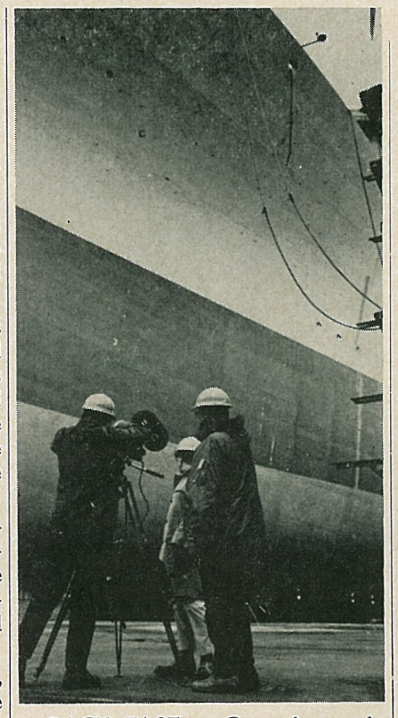
Sets of 2¼ x 2¼ color slides of the Apollo 8 mission are on sale at $3.15 each at all CRA outlets. Each of the sets normally sell for $4.95 and includes 20 slides.

BUOY INFORMATION SHOWN AT CONFERENCE

An exhibit displaying information on Convair designed buoys was shown at the recent Offshore Exploration Conference (OECON IV) at San Diego's Convention Center.



MISSILE MAN TO MISSIONARY—"Peace go with you" cake was presented to Floyd Duffey, left, on his retirement from quality assurance division of DCASPRO at Convair. Duffey is leaving job as Atlas inspector to become missionary worker in the Congo. With Duffey are J. F. Harrison, center, chief of DCASPRO quality assurance branch, and J. S. Garcia, deputy chief, quality assurance division.



BACK EAST — Convair movie team is dwarfed by USS Milwaukee (AOR-2) at Quincy shipyard.

New Shoe Styles Offered In-Plant

New styles and money savings are offered at the Convair safety cribs, according to R. P. Schulz, senior safety engineer.

New styles were recently added in both dress and work shoe lines that are sold to employes at cost and may be paid for on a payroll deduction plan.

Safety prescription glasses also may be purchased at "substantial savings" although they cannot be purchased on the payroll deduction plan.

Schulz pointed out that, in addition to the savings mentioned, safety equipment purchases are tax deductible. "But above all the style and savings, there is the most important factor for purchasing the equipment: preventing serious injury," he added.

Location of the safety cribs and new hours of operation are:

Lindbergh Field, Bldg. 16, ext. 2086 — Monday through Friday, 8:15 a.m. to 11:30 a.m.; Tuesday and Thursday, 12:30 to 5:00 p.m.; Wednesday, 3:30 p.m. to 5 p.m.

AF plant 19, Bldg. 2, Col. AB 9, ext. 1261—Monday, Tuesday, Thursday and Friday, 12:45 to 5 p.m.; Wednesday, 12:45 to 3:15 p.m.

Kearny Mesa Plant, Bldg. 5, Col. H1, ext. 1966—Monday, 8:15 to 11:30 a.m. and 3 to 5 p.m.; Tuesday, 8:15 to 11:30 a.m.; Wednesday, 12:30 to 5 p.m.; Thursday, 8:15 to 11:45 a.m.; Friday, 12:30 to 5 p.m.

Travel Reservations At LF Now in Bldg. 1

Convair's travel reservations office has been moved to a more convenient location in Rm. 10 of Bldg. 1 at Lindbergh Field — adjacent to the cashier's office.

Airline, hotel and auto rental reservations for employes traveling on division business are handled through the office, which is open from 8 a.m. to 4:45 p.m. weekdays. The telephone extension, 1426 LF, remains unchanged.

Dot Luscomb, Mary Hardy and Jo Justis staff the office, now a function of financial accounting Dept. 191-0. The new mail zone is 191-09.

Operation of the office is under the direction of L. G. Facka, supervisor of financial accounting, and Jim Willis, group supervisor of financial accounting.

IRC Will Sponsor Style Show May 22

Tickets for the annual Industrial Recreational Council fashion show May 22 at Sea World are now on sale at $2.25 each at the CRA Clubhouse, phone ext. 1111 KM.

Fashions from Worth's and Graf Furs will be modeled and a half-hour water fantasy show, a ride on Sea World's skyride, refreshments and door prizes will be included.

Convair Movie, TV Team Shoots Action at Quincy Division

Convair division motion picture and TV department crews have filmed some unique activities during recent weeks while preparing films for Quincy division and General Dynamics Corporate Office.

Highlighting work at Quincy for one three-man film crew was photographing the Navy's 659-foot replenishment fleet oiler USS Wichita (AOR-1) as she gave herself a bath in Massachusetts Bay during first builder's trials.

Robert Gobrecht and Gordon Whitford were aboard ship and Bill Carter was overhead in a plane for the big ship's countermeasure washdown test in which a sea-water sprinkler system was used to simulate washing away of radioactive contamination.

Aerial shots of the Wichita wash-down were carried by newspapers throughout the country. Spray covering the ship during the test resulted in false ship-fire reports and in the Coast Guard initiating then cancelling a request for a West German destroyer to go to the Quincy ship's aid.

The special film for Quincy documents its shipyard construction capabilities and shows activity ranging from engineering and work of major ship structural components to plumbing, wiring and painting.

Several of the shipyard scenes were "aerial views" filmed by Carter, Charles DeMund and Bill McClure from the bucket of a large crane. A battery-powered heating unit was used to keep camera mechanisms from freezing.

Film crews also have been busy in Rochester and San Diego filming activity at Electronics, Stromberg-Carlson, Electronics-SD, Convair, and Stromberg DatagraphiX for use in a General Dynamics report film. DeMund and Carter shot the Rochester scenes and Gobrecht and Mark Irwin those in San Diego.

Bob Montague and Betty Miller of Convair and film director Ray McPhee of the Corporate staff handled editing.

Officers Installed By Women Golfers

Installation of officers followed a General Dynamics Women's Golf Club tourney at Carlton Oaks Country Club.

Installed were May Dean Schell, president; Agnes Sliger, vice president, Ilene Wilson, secretary; Ora Carpenter, treasurer.

Mabel Humphries fired a low net 72 to take first place trophy, just one stroke ahead of Ilene Wilson who had a 73. Mabel took another trophy for sinking most birdie putts over the 18-hole course.

Members will challenge Singing Hills Pine Glen Course April 12 with tee-off time slated for 9:30 a.m.

Medlock, Magnuson Address Conference

L. I. Medlock, Convair director of reliability control, delivered the keynote address at the 11th annual San Jose Quality Control Conference at San Jose State College March 22.

His talk was titled "Quality and the Changing World Around Us."

W. E. Magnuson, chairman of the Convair craftsmanship program spoke on "The How of Quality Motivation."

Navajos Build F-111 Equipment

The General Dynamics Navajo Facility at Fort Defiance, Ariz., is building $150,000 worth of electrical cables in support of Convair division's F-111 Aerospace Ground Equipment (AGE) program.

The $800,000 facility was built by the Navajo tribe and leased to General Dynamics in 1967 for subassembly work. The plant, located on a five-acre site in the Fort Defiance industrial complex, has 150 employes.

The Navajos will build cables which will be used as adapters on a DITMCO test set, just acquired by Convair as a piece of capital equipment.

The DITMCO is designed as a wiring analyzer. The cables will be plugged into the DITMCO and then into the newly manufactured AGE to determine if the item under test has been properly wired.

According to George Stringfellow, senior project engineer, Dept. 550-0, each cable will have approximately 200 wires with an average of ten connectors per cable.

Decision to place the work at the Navajo facility was reached after a capability inspection conducted by Stringfellow, F. J. Parker, Dept. 832-3, W. B. Barth, Dept. 780-0, R. Degn, Dept. 403-2 and H. C. Cox, Dept. 144-1.

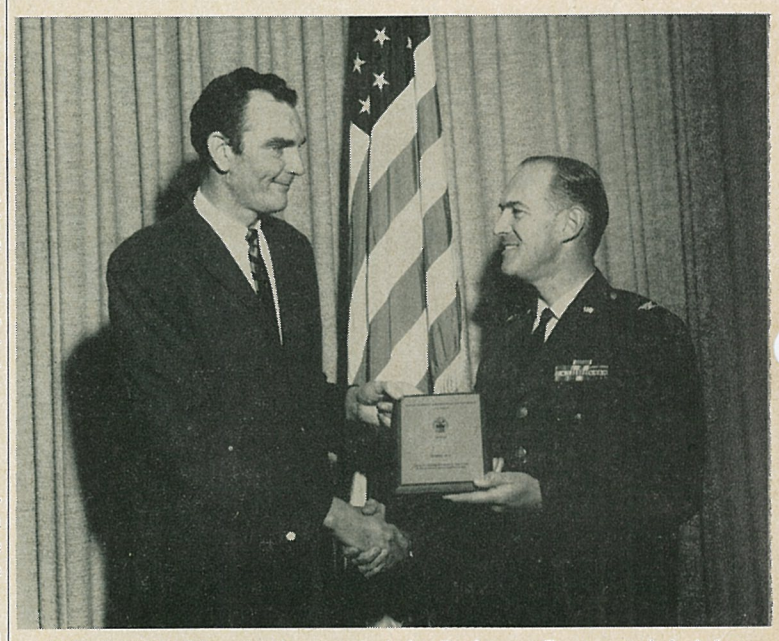
Slide Rule Course Slated Thursdays

A six-week course on slide rule use will be given from 7 to 9 p.m. Thursdays beginning April 10 in Rm. 71 at El Cajon Valley High School. Paul Stephens, design specialist in Convair's Dept. 584-0, will teach it.

Registration will be $1. No previous experience with the slide rule is required for admission. Phone Stephens, ext. 1601 KM, for additional information.

BOWERS ATTENDS AF ASSN. MEETING

Jack L. Bowers, Convair general manager, and W. W. Withee, director of military space programs attended the Air Force Association annual meeting in Houston.



DCAS HONOR—Andy Pond, left, Defense Contract Administration Services quality assurance representative at Convair, receives "Quality Assurance Man of Year" award from Col. Charles Merz, DCAS plant representative. Pond was chosen as outstanding quality assurance representative in DCAS-Los Angeles region.

Next Week Is Deadline For Keg Championships

The 28th annual CRA championship bowling tournament will be at the Pacific Recreation bowling lanes April 19-20 and 26-27.

The first weekend will be for the team events and the last for doubles and singles bowling. Deadline for entering is April 12.

The tournament, open to all Convair, Electronics - SD and Stromberg DatagraphiX employes and members of their immediate families, will select champions in men's and mixed team events, men's and women's singles, men's and mixed doubles and men and women all-events.

Handicaps will be based on 1968 book averages. If no official average is available, current highest average of 21 games or more will be used or an assumed average of 200 for men and 180 for women, maximum team average of 855 and maximum doubles, 370.

Five sanctioned bowlers may form a team and enter without the payment of additional membership dues. Bowlers may enter only in doubles and singles and mixed team or mixed doubles. Doubles only or singles only will not be accepted. All women's teams will compete in the mixed division.

Fees are $2.50 per person for each event entered. Entry forms are available at all bowling alleys where CRA sponsored leagues are in action, CRA clubhouse and all employe benefits outlets.

CRA bowling commissioners Mike Brooks and Jim Hayman are directing the tournament. Brooks may be reached at ext. 2252 KM and Hayman at ext. 581 LF.

Bill Brask Jr. Leads Golfers

Bill Brask Jr., All-American collegiate golf champion from the University of Minnesota and son of Bill Brask of Convair's Dept. 572-3, joined CRA linksmen for the club's monthly tournament March 22-23 at Carlton Oaks Country Club.

Young Brask, home for a few days during spring vacation, shot a one under 71.

Last year he came from six strokes behind to win the 72-hole Big Ten Conference golf championship, was runner-up for the Northern Intercollegiate crown, and was one of eight collegiate golfers from throughout the U.S. chosen for the All-American College Golf Team.

Flight winners in the CRA tourney, with net scores, were: Gerry Swarts, 1st flight, 69; John Doggett, 2nd flight, 69; John Gordon, 3rd flight, 67; M. S. McEachern, 4th flight, 70; Dave Novak, 5th flight, 66; Mike McNally, 6th flight, 69; Chuck Giamanco, 7th flight, 71.

Skiers to Compete In Mammoth Races

The Convair Ski Club will participate in two races at the Mammoth Mountain ski area in the next two weeks.

During the weekend of April 4-6, the ski club will have a challenge race with the Torrey Pines club. Skiers will leave at 6 p.m. April 4 from the flag pole at the Kearny Mesa plant aboard a chartered bus. They will stay at the Pinecrest sports lodge.

The next weekend, April 11-13, the Convair Ski Club will have entries in a giant open slalom race sponsored by the San Diego Ski Club. Members will leave from Kearny Mesa at 6 p.m. April 11.

Final Europe Tour Meeting Scheduled

A final meeting to outline plans for a 22-day CRA-sponsored European trip will be held at 7:30 p.m. April 9 in the CRA Clubhouse.

An orientation meeting also will be scheduled later for those going on the tour.

Craig and Thornton Win Table Tennis

Trophy winners in the second CRA table tennis tournament, conducted March 15, were Les Craig, Dept. 832-2, and Carl Thornton, Dept. 059-5.

Craig topped Mort Blatt of Dept. 584-0, 21-18 and 21-16, to win the A division. Thornton took two out of three games from Carl Leonard of Dept. 551-4 to win the B division.

The Thornton-Leonard match was extremely close with Thornton winning the first and third games 23-21 while dropping the second game by a 21-19 score.

The next tournament will be scheduled in May, Tables are set up in the CRA clubhouse each Saturday from 10 a.m. to 4 p.m. for open play.

25-Mile Scenic Ride Planned by Cyclists

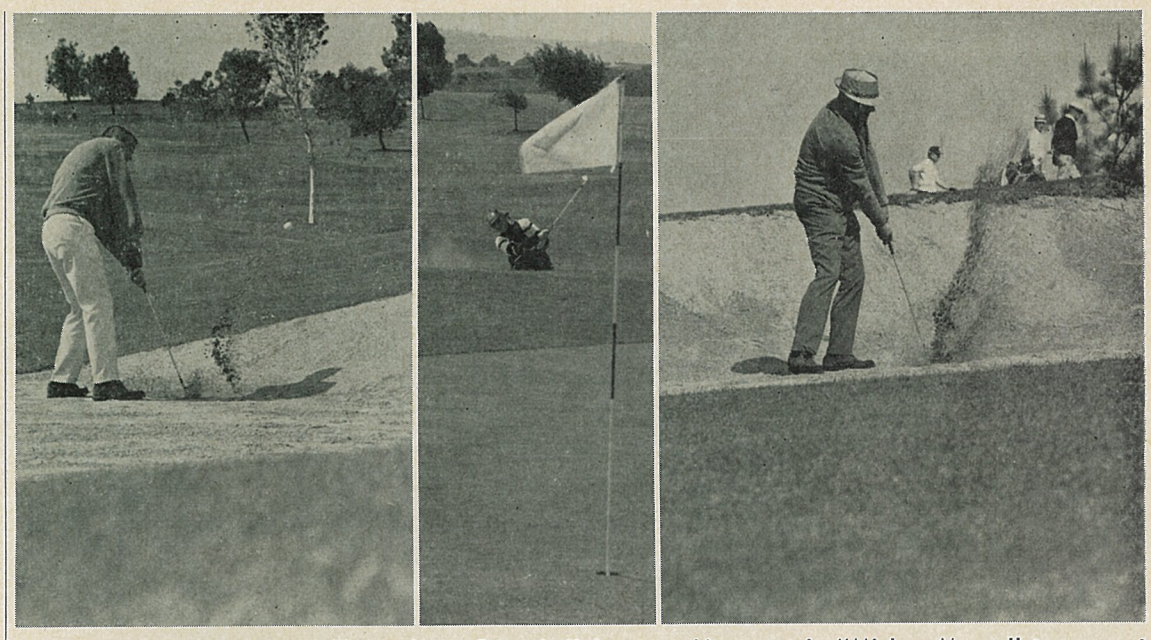
The CRA Bicycle Club will take a 25-mile ride beginning at 9 a.m. April 12.

Included will be the La Jolla scenic ride which uses bike trails throughout Pacific Beach, Clairmont, UCSD campus and La Jolla.

Members will meet at 8:45 a.m. at Myke Dickey's house, 4764 Mt. Harris. Ride leader is Dave Lukens, ext. 2881 KM.

BOXING TICKETS ON SALE AT $4

Tickets for the AAU boxing championships April 29 are on sale at $4 each (a $1 saving) at all CRA outlets. Each ticket will provide admission for both 2 p.m. semi-finals and the 8 p.m. finals events.



TRAPPED AT EIGHTEEN—These three Convair linksmen taking part in "Mickey Mouse" tourney at Torrey Pines last month had something in common. Each landed in sand trap guarding 18th green. Making recovery shots are, from left, H. Lee, Dept. 700-0 (a southpaw); Frank Stephenson, Dept. 584-0; Tom Chadwick, Dept. 145-1.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is April 8. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — La Jolla 25-mile ride, April 12. Meet at 8:45 a.m. at Myke Dickey's home.

BONAIR FLYERS—Meeting April 3, 7:30 p.m. Private pilot ground school course starts April 7, 7:30 p.m.

BOWLING—CRA championship tournament at Pacific Recreation bowling lanes April 19-20 and 26-27. Open to all employes.

BRIDGE—Play every Friday, 7:30 p.m.

CERAMICS—Meet Tuesday and Thursday, 7-10 p.m.

CHORUS—Rehearsals 7:30 p.m. Wednesdays.

COINEERS—Meeting April 14, 8 p.m.

DELTA DIVERS—Meet April 9, 7:30 p.m.

FENCING—Instruction course to begin April 11, 7:30 p.m. for beginning and intermediate fencers, YWCA, 10th & C Sts. Tournament at San Diego State College Gym, April 19, 12 noon.

FISHING CLUB—Meeting Tuesday, April 15, Gillespie Field Clubhouse; pot-luck dinner, 6:30 p.m., meeting 7:30 p.m.

GARDEN CLUB — Meeting tonight (April 2), 7:30 p.m., Floral Association Bldg., Balboa Park. Spring Rose Show, April 19-20.

GOLF—Monthly tournament at Bonita, April 12-13.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

ICE SKATING—GD family skate night Thursday, 6:30-8 p.m., Mission Valley Ice Arena.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot April 13, 9:15 a.m., SD Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—On-the-air-network every Wednesday, 7:30 p.m. Radio Communications for Borrego off-road races, April 19-20.

RIDING CLUB—Meeting April 19, 7:30 p.m.

RIFLE CLUB—Senior shoot April 9, 7:30 p.m. Junior shoot April 5, 1 p.m., Gillespie Field Range.

ROCKHOUNDS—Meeting April 9, 7:30 p.m. Elections and slide program.

SCULPTURE—Worshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Mammoth Mountain race, April 4-6 and April 11-13.

SPORTS CAR CLUB—Meet April 9, 7:30 p.m., Convair executive dining room, Lindbergh Field.

STAMP CLUB—Meeting April 10, 7 p.m.

TABLE TENNIS—Play Saturday, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS—European tour, May 17-June 7; tour outline meeting April 9, 7:30 p.m.

TRAILERS—Outing to Peg Leg Monument in Borrego Valley, April 12-13; meeting 7:30 p.m. April 24, Gillespie Field Clubhouse.

TROPICAL FISH—Meeting and workshop Mondays, 7:30 p.m.

WOMEN'S GOLF—Singing Hills Pine Glen course, April 12, 9:30 a.m.

Convair Son Playing Star 'Wedding' Role

James Davila, 8, son of Phillip Davila, a journeyman welder in Convair's Dept. 401-5, has a starring role as John Henry West in the University of San Diego Alcala Players' production of "Member of the Wedding."

The play was presented last month at USD and seven performances are scheduled this month at Loyola University in Los Angeles.

James, a third grader at Darnall Elementary, has been active in theater groups since he was 6.

New Officers of CRA To Take Over Reins

Installation of new officers of the Convair Recreation Association Employes' Council will be held at 6:30 p.m. April 5 at the Le Baron Hotel.

The new officers are Dick Bowen, president; Steve Barry, vice president; Arch Ellsworth, treasurer; Inez Schurr, secretary.

Fencers Plan Instruction

The Convair Fencing Club will begin an eight-week course for beginning and intermediate fencers Friday, April 11 at 7:30 p.m. at YWCA gym, 10th and C streets.

Equipment will be furnished. A fee of $6 will be charged to help cover the cost of the gym.

For more advanced fencers, the club has available the latest electrical scoring devices and a minimum amount of equipment for fencers who do not have electrical jackets or foils.

On April 19 the club will participate in the San Diego Mixed Team Championship Fencing Tournament to be held at San Diego State College gym.

Pistol Club Holds Training Session

CRA Pistol Club recently held its second training class with NRA instructors Jim Halfacre and Don O'Brien at the San Diego Police range.

Attending were: E. T. and Aileen Lipscomb; Ruth Kampmann; Leon Thomas and his son, James; and Carlton and Sanydral Puterbaugh.

Next class is set for 10:30 a.m. April 13. Guns are available for shooters at the pistol range.

FILM PRODUCERS CHAPTER HOSTED

The Convair motion picture and television department played host to the San Diego Chapter of the Information Film Producers of America, March 20.

Flyers to See Slides Of 10,000 Mile Trip

The Bonair Flyers' private pilot ground school course will begin April 7 at CRA clubhouse at 7:30 p.m.

The class is designed to prepare for the private pilot written exam, an FAA requirement for a private pilot license.

At their regular meeting on April 3, the Flyers will see slides of a 10,000-mile cross continental flight which was taken recently by two Electronics-SD men.

The men, Bill Sadler of Dept. 811 and John Wood of Dept. 812, went from San Diego to Florida, the Bahamas, Trinidad, up the northeast coast of South America, across Mexico and back to San Diego.

Steve Adams is coordinating the slide showing.

Rockhounds Slate Officer Selection

Election of officers for 1968-69 will highlight the April 9 meeting of CRA Rockhound Club.

The 7:30 p.m. meeting in the CRA Clubhouse will include a slide show entitled, "Rockhounding Trips from San Diego to Maine." Refreshments will be served and door prizes awarded.

Rockhound buffs are reminded that the Gillespie Field rockshop is open each Wednesday and Thursday, 7-9 p.m.

Golf Club Tourney Slated at Bonita

CRA Golf Club's next tournament is scheduled April 12-13 at Bonita.

Del Dimmitt, commissioner, said participants may reserve starting times beginning today by calling ext. 511 LF.

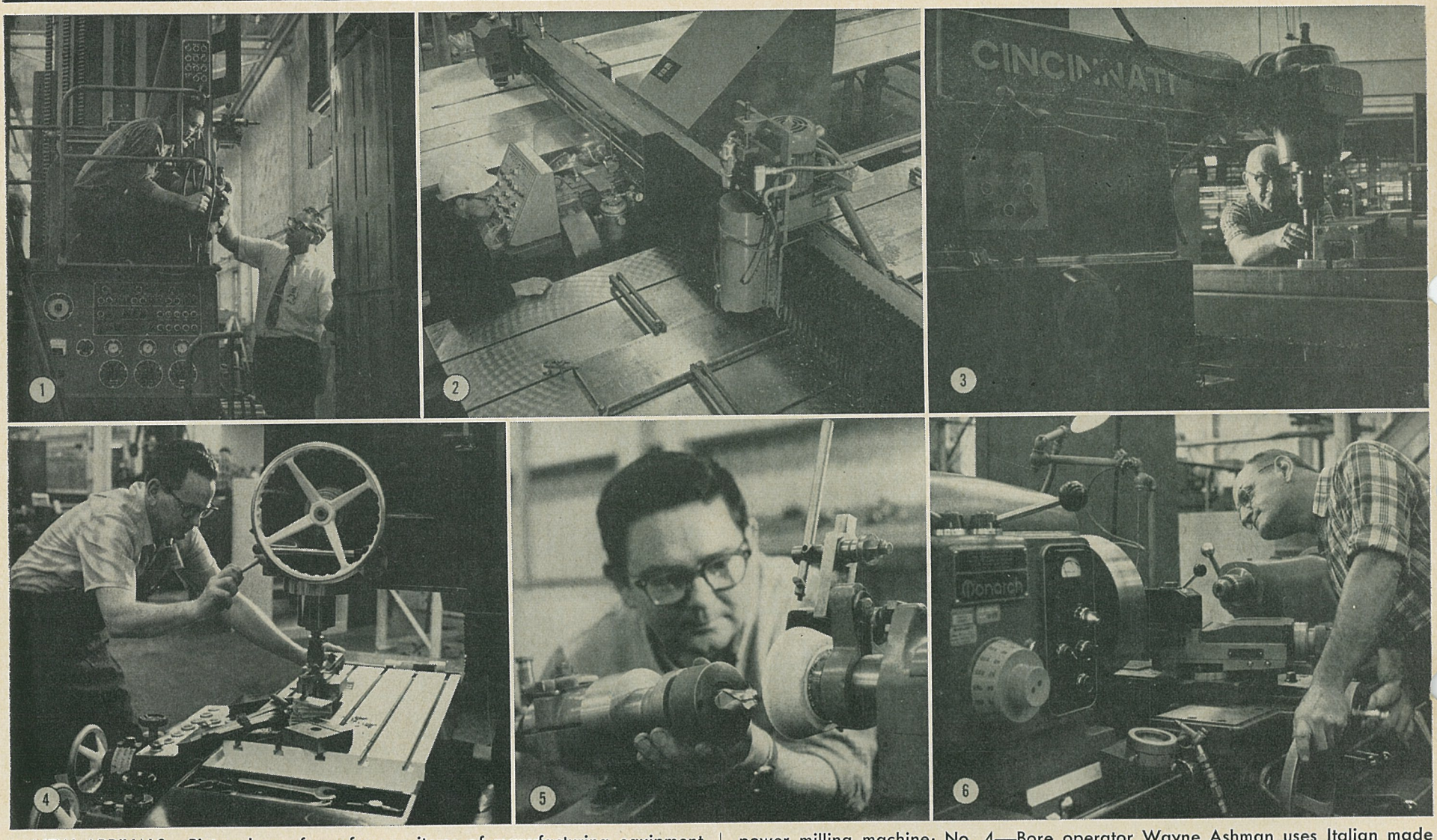
"Golfers should not reserve starting times unless they are certain they will be present to play," Dimmitt said. "We've been having a problem with golfers not showing up at their scheduled tee-off times."



GOLF AWARD—Electronics-SD linksmen will testify that Eddie Bray, right, is well acquainted with pars and birdies, hardly knowing meaning of a bogey. Bray fired gross 75, net 72 at Carlton Oaks Country Club recently to win Electronics-SD golf championship. Presenting trophy is Don Illeman, 1967 champion. Runners-up with net 74s were Bob Froeschle and Ernie Huber.



CRA FIREPLACE—Karen Rose, left, and Inez Schurr, both of Dept. 131-7, discuss plans for use of new fireplace in picnic shelter building at Missile Park. George Schmiedel, supervisor of recreation, said fireplace can be used both for club meetings and by picnickers for sheltered cookouts. Clubs can reserve facility by calling ext. 1111 KM.



NEW ARRIVALS—Pictured are few of many items of manufacturing equipment in operation at Convair's Lindbergh Field plant. No. 1—Machinist Clyde Hoover and Foreman Ken Jordan confer during installation of Pratt-Whitney Keller Duplicator. No. 2—Mill machinist Ken Hall guides Profi-Mill used for cutting templates and lofted lines. No. 3—George Anderson, mill machinist, adjusts Cincinnati-Nerci power milling machine; No. 4—Bore operator Wayne Ashman uses Italian made Icma Jig Bore to drill detailed machine shop tool. No. 5—Tool and cutter grinder Milton Prain sets Pratt-Whitney radius grinder to make hydro-press form die. No. 6—Lathe machinist Ralph Metz guides precision mechanism of Monarch lathe. Other new machines also are being installed to support DC-10 program.

Consolidated-Built

41-Year-Old Biplane Faces 1,700 Mile Delivery Flight to West Coast

A 41-year-old biplane, built by Consolidated Aircraft Co. in Buffalo, N.Y. (Convair's predecessor firm), is scheduled for a 1,700-mile ferry flight next week from Little Rock, Ark., to San Diego where it will go on permanent display in the Aerospace Museum.

Col. Owen Clarke, USAF, ret., director of the museum, will fly the two-place PT-3 "Husky" believed possibly the last of 264 built by Consolidated for the U. S. Army and for Argentina, Brazil, Peru and Cuba.

Clarke will be equipped with a compass of sorts and good eyesight — and will rely most on the latter during his five or six-day cross-country flight, landing primarily at small airports with dirt strips since the PT-3 has a skid instead of a tail wheel, and no brakes!

He won't have a radio, and probably couldn't hear one if he did because of noise in the open cockpit. He will phone ahead from one landing point to the next.

"I'll just buzz the tower, wiggle my wings, wait for a light, set it down, and let it roll to a stop," he said.

The old biplane cruises at 80 mph, lands at 45, has a flight ceiling of 13,000 feet, and will burn low-test aviation fuel, or auto gas in a pinch.

Clarke learned of the PT-3, a variant of the earlier Navy NY-1, through old plane buffs in San Antonio, Tex., and traced its ownership to Seth Ward, president of a supply firm in Little Rock.

Purchased with funds from the Fleet Foundation, the plane's presence in the San Diego Aerospace Museum will be a reminder of the "hey days" of Consolidated and its founder, Maj. Reuben Fleet.

Clarke recently visited Little Rock to inspect the PT-3 and said he found it in excellent condition.

Since flying it was obviously the most economical way to get it to San Diego, Clarke, who holds multi-engine aircraft rating, has since been checked out in light planes and picked up his single-engine ticket.

He's also collecting some warm clothing, flight goggles, etc. (The windshield on the PT-3 is only 6 x 12-inches, just enough to deflect the airstream from the pilot's face.)

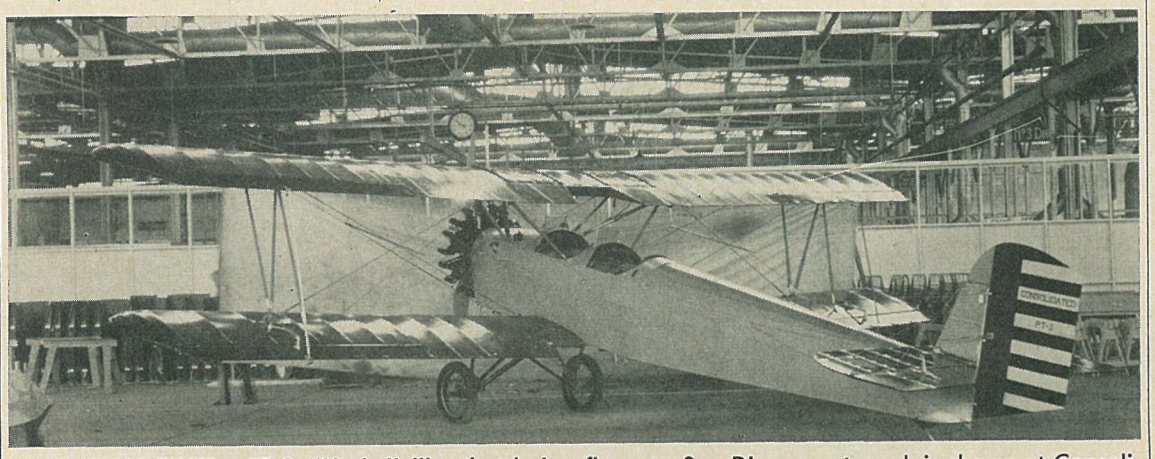
Tentative plans have been made for Clarke to present "keys to the city" or invitations to visit San Diego during its 200th anniversary celebration to mayors of communities in which he lands.

He'll be flying a "southern route" to take advantage of lower level terrain. Highest mountain areas to cross will be at the 5,000-foot level in San Diego County's Lagunas and near El Paso, Texas.

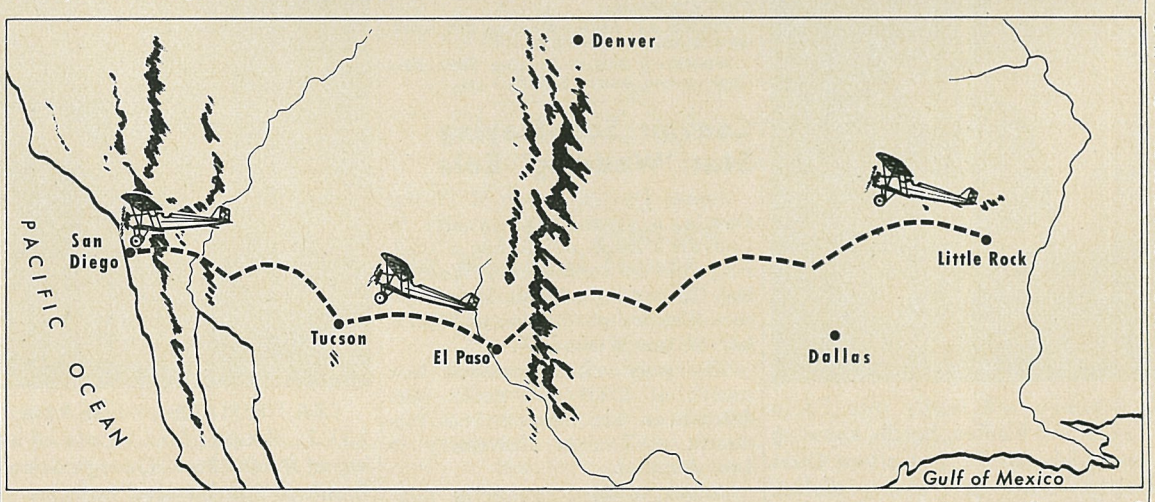
Gordon Jackson, design engineer in Convair's Dept. 533-2 and history buff, said 130 PT-3s were ordered by the Army, eight by Cuba and one each by Brazil and Peru after the first, a converted NY-1, was unveiled late in 1927.

An improved version, the PT-3A, was introduced the following year with the Army purchasing 120 and Argentina and Cuba ordering two each.

Two PT-3s also were converted to observation planes (designated XO-17 and XO-17A) prior to delivery. The Army bought 29 of the O-17 "Couriers" for National Guard use and Canada ordered three of a special design.



"HUSKY" FLYER—PT-3 "Husky" like that being flown to San Diego next week is shown at Consolidated Aircraft plant in Buffalo following completion in 1928. PT-3 is powered by seven-cylinder, 225-horsepower Wright Whirlwind engine, same type that carried Lindbergh across Atlantic in 1927.



SOUTHERN ROUTE—Sketch depicts route and terrain over which Col. Owen Clarke, director of Aerospace Museum, will fly in bringing PT-3 to San Diego.

Aircraft Manufacturing Capability Increased by New Machines at LF

Modernization and expansion of Convair division's aircraft manufacturing capability at the Lindbergh Field plant is progressing steadily as more new machines and equipment arrive and go into operation.

More than 40 large items of manufacturing equipment already have been received while others will be added at regular intervals until 1972 when more than 100 will have been installed.

Located primarily in Bldgs. 1, 2, 3, and 5 at LF, the new equipment ranges from a five-axis milling machine, lathes and special drill presses to chemical processing facilities.

Among the tasks the new machines are taking over are skin fabrication and tooling for DC-10 fuselages.

Also being upgraded is the division's chemical processing capability with additions of Alodine 1500 and Chromic Acid Anodize processes.

Among the more spectacular of the new machines is an electric-eye operated Profi-Mill which cuts loft lines and templates by "reading" drawings. The mill "reads" the blueprint with a photo scanner, transferring what it "sees" to the metal surfaces being cut. Also included is a high pressure (10,000 psi) forming press for airplane skin panels.

The five-axis mill with its three spindles and 45-foot table is Convair's first multi-spindle, multi-axis milling machine.

Another recent addition is a German-made surface grinder capable of form, crush or surface grinding to a tolerance of .00005 (50 millionths) of an inch.

Nearly all these new machines and facilities are due for first use on Convair's DC-10 fuselage project as operations increase tempo.

SAC Expecting FB-111 by '70

Strategic Air Command is slated to begin receiving FB-111 bombers in fiscal year 1970, according to information released by SAC headquarters.

The FB-111 will be a variation of the tactical fighter and will replace early models of B-52s, which will be retired from the active inventory.

"In comparison to B-52s," SAC's Directorate of Information said, "the FB-111 will fly faster, at both low and high altitudes. It will be able to carry both nuclear and conventional weapons. The new bomber also will require less distance for takeoff and landing than the B-52s it will replace.

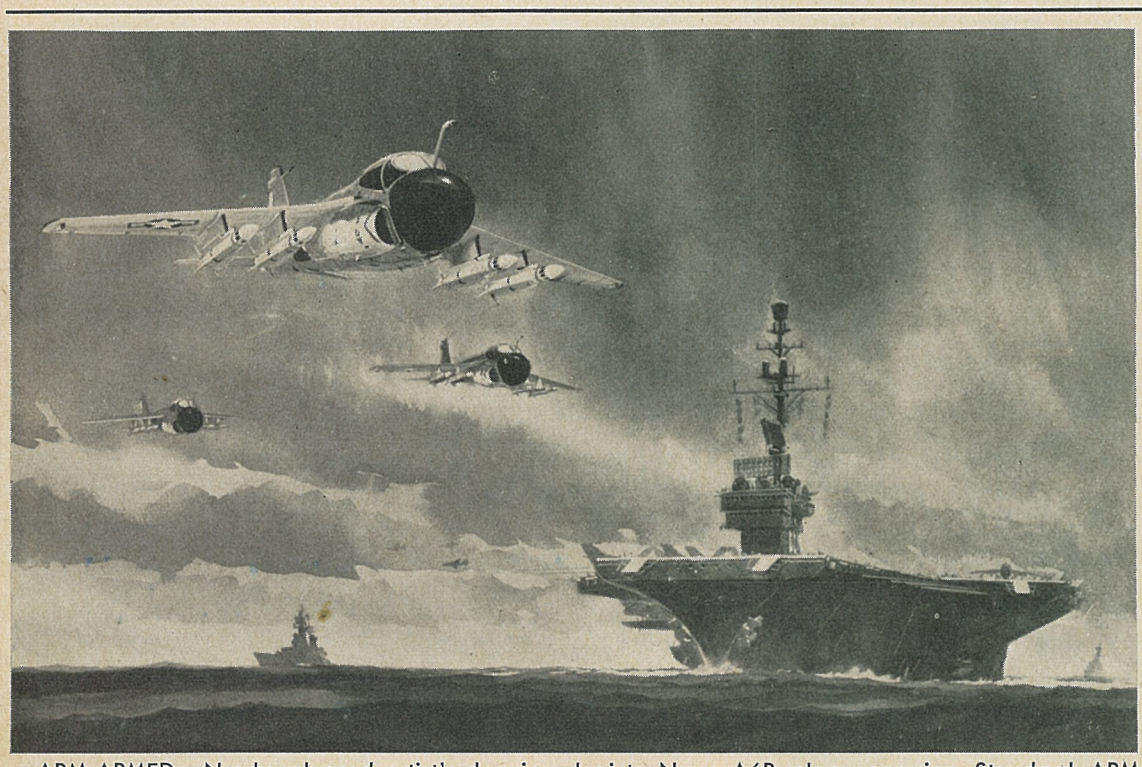
"Weapons and external fuel tanks can be carried on wing pylons. The strategic bomber version has eight pylons.

"The FB-111 series of aircraft is the first to combine the maneuverability of the fighter with the payload and range of a bomber."

POMONA EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 8 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 16, 1969



ARM-ARMED—Newly released artist's drawing depicts Navy A6B plane carrying Standard ARM air-to-ground missiles. Standard ARM, which homes on radiation emitted from ground radar, is in production at Pomona division. Drawing is by E. D. Ramstead of engineering department's publications illustration section.

Team Submits ASMS Proposal

Proposals for the engineering development phase of ASMS (Advanced Surface Missile System) are going this month to the Naval Ordnance Systems Command from the General Dynamics' industrial team.

Proposals for the ASMS development plans were submitted April 10 and the program cost estimates are due tomorrow (April 17).

"Phase B of ASMS is ended with the submittal of our contract definition phase reports and our proposals for engineering development and production," R. M. Kemp, General Dynamics program manager, said. "This effort has been successful because of the dedication of the people involved in the program.

"The individual performance of each has been outstanding," Kemp declared. "We set out to produce the best proposal General Dynamics and its industrial team could create — and that goal has been achieved. The cooperation of our other team members — Hughes, Univac, Sperry and Northrop — has been superb. Never before has such a strong team of companies and individuals worked with such a spirit of unity."

Kemp expressed appreciation to the Pomona engineering department's publications section for its work in meeting requirements of the ASMS Phase B report as well as for many formal presentations and informal reports.

"During Phase C of the ASMS program, our proposals and reports will be evaluated by the Navy relative to the other two competitors," Kemp added. "We will also be negotiating the prime contracts, answering questions from the Navy and preparing for the initiation of the engineering development phase.

"Based on our performance during Phases A and B of ASMS to date, we can only expect to be successful in this final competitive phase of the program."

ASMS will be the Navy's major defense missile system of the 1970s with new search and guidance radars, command and control complexes with integrated data processing, missiles and launchers on new guided missile ships.

Six Apprentices Now in Training At Pomona Div.

Two additional apprentices joined Pomona division's apprentice program last month bringing to eight the total number in training.

Selected by the Joint Apprentice Committee were Steven P. Straus of Montclair and Henry N. Padilla of Pomona.

Both join the division as tool and die maker apprentices assigned to on-job training in tool manufacturing (Dept. 42). They will attend work-related classes at Mt. San Antonio College.

First group of six named to the program last fall included Gary E. Barton and David Garcia, electronic technician apprentices; Charles Sandberg and Danny Bisson, machinist apprentices; and Christopher Matscha and Martin Bates, tool and die maker apprentices.

The program was established last year jointly by Pomona division, Lodge 1233, International Association of Machinists and Aerospace Workers, and

(Continued on Page 2)

Nearly Four Tons

Delivery of ASMS Proposal Climaxes An Enormous Job of Production

This month General Dynamics will deliver to the Navy the largest single proposal ever produced by the Pomona division.

The report and proposal submitted required at the end of ASMS (Advanced Surface Missile System) contract definition phase is the most challenging publications task the division has ever seen," said John Baird, manager of publications.

In total, the package will be about 30,000 pages, or a stack of books 14 feet high. Thirty sets weighing nearly four tons are being delivered to the Navy in two increments — the first part April 10 and the final part tomorrow (April 17).

Anticipating the magnitude of the ASMS task and the short production schedule, publications planned and implemented a special handling and control system to cope with the massive amount of manuscript and art input. This system, built around a "package" concept, provides control and status information of all work as it proceeds through the production process.

Much of the credit for this early planning goes to Hy Brown's publication writing section.

"Milt Speas working with the program office and Frank 'Monty' Montgomery concentrating on the production processing problems have, together, developed a system which has worked without a hitch," Brown said. "We have never had such good control and status visibility, even on smaller jobs."

Doug Tubbs, illustration section supervisor, assigned special art coordinators: Jim Perry to work with the authors in defining art requirements, and Ordell Jensen to coordinate the work through production. "Our early contacts with the originators gave us a good picture of the total art requirements," commented Tubbs. "It also gave us an early start on some of the larger, more complex pieces."

A special copy preparation capability was set up for the ASMS task. The composition group supervised by Dora Bencomo was equipped with IBM Magnetic Tape Selectric Typing Units which were housed in a trailer adjacent to Bldg. 4. The original manuscript copy input is recorded on these units, and after final corrections and revisions are incorporated, the tapes are played out on composer units which type the final reproduction copy in the programmed format.

"One of the real pay-offs of our package handling system was the parallel production of art and repro typing," Baird said. "You can't lay out pages without art and copy. Our system insured that both parts were there for the wedding."

Each volume manager was provided a Xerox "galley review" copy before final printing. A separate "correction team" was set up under the direction of Pearl Hill to incorporate the last minute changes that resulted from galley review. This unit was

(Continued on Page 2)

Property Managers Elect L. V. Davis

L. V. Davis of facilities administration (Dept. 7) has been elected president of Saddleback Chapter, National Industrial Property Management Association. The 54-member chapter represents Orange county.

NIPMA, with headquarters in Los Angeles, is composed of individuals interested in property management of government and company-owned industrial plant equipment. Members represent most of the aerospace firms in Southern California. A merger is planned with Property Administrators Association, an East Coast-based organization with similar objectives.

Tickets to Disneyland Party On Sale at $3.50 Per Person

Tickets for General Dynamics Night at Disneyland on Friday, May 23, will go on sale today (April 16), PRA Director H. S. Naish announced last week.

Pomona division families are urged by Naish to purchase tickets early. Sale of tickets this year will be on a first-come basis and closely monitored to restrict attendance to persons employed at the Pomona plant and their families.

Tickets at $3.50 per person will allow unlimited use of all Disneyland attractions (shooting galleries excepted). Parking is free, and the public will not be admitted during the five-hour General Dynamics family party, 8 p.m. to 1 a.m.

General Dynamics Night tickets may be purchased at the PRA office, Room 110, Bldg. 1, from 8 a.m. to 4:15 p.m., Monday through Friday.

All tickets must be purchased in advance. None will be sold at Disneyland gates on May 23.



ASMS EFFORT—Thirty sets of Pomona-produced ASMS proposals weighing four tons are being delivered to Navy this month. Massive task required creative and dedicated efforts by engineering department's publications sections with aid from other groups. Special system was created (right photo) to handle and control large quantities of manuscript and art. Control began with this edit group set up in Bldg. 44. Center was established by writing section in Bldg. 4 publications area (left photo) to provide both rigid controls and status visibility. Proposal is largest ever produced at Pomona division.



TRAILBLAZER—Marian Gedemer, a gyro optics checkout inspector at Pomona division, is first woman to complete requirements in Citrus area's State of California Certificate Program in Quality Control. Certificate was presented by H. J. Stuart, left, director of quality assurance. On hand to extend congratulations were Dale Connor, right, chairman of program's advisory committee, and A. K. Williams, supervisor of gyro optics inspection.

Pomona's 1968 Safety Record Ranks Second Nation-Wide

Pomona division placed second in the 1968 nation-wide safety contest sponsored by the National Safety Council for the country's largest airframe (Group A) manufacturing firms.

Pomona, with a frequency rate of .29, was second in 1968 only to Martin Marietta in Orlando, Fla., which posted a winning .17 rating.

Convair placed third with a record of .43 followed by Martin Marietta in Denver, with a rating of .46. Fort Worth division was in fifth place with a .62 mark.

During the past 14 years of national competition, Pomona employes have established an outstanding record. The division placed first in 1956, 1958, 1964, 1965, 1966, and 1967; third in 1955, 1959, and 1961.

H. S. Naish, manager of employe services and safety, and C. J. O'Neill, senior safety engineer, received notification that Pomona will receive an Award of Merit from the National Safety Council for its 1968 safety achievement.

Earlier this year, Pomona was announced as winner of the General Dynamics Corporate-wide safety contest for best record during 1968 and also as winner of the Los Angeles contest for aerospace firms.

Petersons, Doktors Win Bridge Battles

PRA Bridge Club members engaged in a Mitchell movement competition Monday, March 31. Ray and Lois Peterson won north-south and John and Jean Doktor, east-west.

Andy Bessette and Ray Mix were second, north-south, and Gerry and Betty Neisen, east-west.

Peterson and Jerry Curl won the April 7 competition. Chuck Allen and Bruce Nicholson were second; Clayton Ryan and George Eubank, third.

Employes and their families are invited to join Monday evening competitions in the Clubhouse at 7:30 p.m. For information, contact Peterson, ext. 8362.

Log Book Entries

Service Emblems

Service emblems presented through April 16:

Thirty-year: Dept. 12, W. C. Drowne.

Twenty-five year: Dept. 22, N. E. Webb.

Fifteen-year: Dept. 5, W. H. MacKirdy; Dept. 6, H. C. Macy, R. H. McGovern; Dept. 27, G. L. Lloyd; Dept. 74, E. R. Oxford.

Ten-year: Dept. 4, T. B. Bailey, N. D. Baker; Dept. 6, W. L. Piel, E. L. Valkenaar Jr., B. A. Weatherhead; Dept. 21, B. J. Middleton; Dept 24, R. T. Ramirez; Dept. 22, J. O. Blaine; Dept. 27, F. Y. Ennis, A. L. McGuire, S. N. Ortiz, R. A. Rios; Dept. 42, D. D. Monroe Jr.; Dept. 51, C. H. Norway, J. R. Sager; Dept. 63, M. L. Hocevar; Dept. 64, Ralph Estrella Jr., Delfinia Lovato; Dept. 68, M. A. Phillips, M. Y. Raulen; Dept. 78, D. J. Green, Hilda Hilario.

Five-year: Dept. 6, V. J. Dorrington, L. R. Greenly, D. E. Howlett, C. S. Jonah, J. C. Smith; Dept. 14, J. R. Pelletier; Dept. 21, P. L. Coleman; Dept. 22, W. J. Knighten, Charles Winkler; Dept. 25, J. O. Brown; Dept. 31, A. R. Teubner; Dept. 75, Jean Trinaystich; Dept. 78, E. I. Rowe.

Deaths

HARTMAYER, Raymond J. (retired from Dept. 5), died Saturday, March 29. He is survived by his wife, Mrs. Ethel H. Hartmayer; two sons; a brother, and four grandchildren.

TRECINA, Joseph F., (Dept. 6), died suddenly April 6, 1969. He is survived by his wife, Mrs. Anna Trecina; two daughters, Nancy and Jo-Ann Trecina; his mother; two brothers, and a sister.

WEST, Joyce C., (Dept. 4), was killed in an automobile accident Sunday, March 23. She is survived by her husband, Anthony L. West; her parents, Mr. and Mrs. Roy L. Coburn; three sisters, and a brother.

Awards

Employe Suggestion awards totaled $7,272 for period ending April 16.

Dept. 4, Material Operations: L. P. Chapple and L. C. Berry Jr., $1,215 each (joint award); W. G. Johnson, $278.

Dept. 6, Engineering: G. C. Baker Jr., $81.

Dept. 9, General Accounting: D. S. Thompson, $45 (two awards).

Dept. 10, Budgets and Cost Analysis: M. J. Elliott, $15.

Dept. 21, Estimating and Cost Control: L. V. Davis, $16.

Dept. 22, Production Control: K. R. Anderson, $74; J. A. Crosby, $12.

Dept. 26, Manufacturing Technology: E. J. Dahlstrom, $17.

Dept. 27, Quality Assurance: E. J. Carey, $32; D. J. Collins, $49; O. F. Hurst, $607; L. L. Kelly, $19; J. R. Lane, $160; W. P. Shekore and S. L. Freedle, $694 each (joint award).

Dept. 31, Experimental: J. N. Elston, $19.

Dept. 42, Manufacturing Engineering: A. A. Knouse, $87.

Dept. 51, Machine Shop: R. E. Cooper, $12; W. J. Farrow, $37 (two awards); J. W. Tarr, $982.

Dept. 53, Sheet Metal Fabrication: J. I. Bienvenue, $10; G. C. Drew, $10.

Dept. 61, Electrical/Mechanical Assembly: H. L. Stutes and N. R. Uebele, $25 each (joint award).

Dept. 62, Photo Engraving and Special Processes: Dale Barwick, $423.

Dept. 64, SMT, HT/IT Navy Programs: J. B. Cromwell, $62.

Dept. 72, Test Equipment Maintenance and Technical Support: D. E. Travis, $151.

Dept. 74, Short Order Run and T. E. Manufacturing and Modification: R. E. Hardaway, $50; A. F. Stange, $19.

Dept. 75, Redeye Assembly and Test: F. Y. Ennis and E. J. Ramey, $68.50 each (joint award).

Cost Improvement Proposals for the same period were:

Dept. 22, Production Control: J. M. Swope.

Dept. 53, General Processes: J. C. Lockhart and Frank Czarniewski (joint proposal).

Patents Issued

HOTINE, William, No. 3,435,222, "Infrared Sensitive Photoconductive Matrix."

Retirements

FOSTER—Willis F., Dept. 51. Seniority date Jan. 26, 1957. Retired April 8, 1969.

GANTZ—Wanda A., Dept. 8. Seniority date March 30, 1959. Retired April 11, 1969.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Pomona division editorial office, Room 119, Bldg. 1, Mail Zone 3-13, P.O. Box 2507, Pomona, Calif., NAtional 9-5111, ext. 3826-4479. GLENN KEHR, editor, Irene Petrie.

Nearly Four Tons

Delivery of ASMS Proposal Climaxes An Enormous Job of Production

(Continued from Page 1)

staffed with personnel loaned by other engineering sections and was kept separate from the main-line typing effort so as not to interfere with the production flow of original input.

The massive task of printing, collating, checking, and final binding fell to Bob Stice's graphics section. "We leased additional printing equipment, borrowed a lot of people from other groups, and, during the final effort, were forced to set up work areas in the aisles," Stice said. "Fold-out pages and drawings too large for our printing presses were reproduced by blackline diazo. The larger drawings were hand-folded and placed in envelopes bound with the text in the books or furnished as separate supplemental volumes. A special problem was the PERT charts — up to 14 feet long. These were delivered in a specially constructed file box as a supplement."

"A job like this makes you realize how gratifying it is to be associated with a group of creative, dedicated people," Baird said. "We had a lot of help and cooperation from people throughout the division. Without it, we couldn't have delivered."

Pomona's engineering publications branch is a division-wide service organization staffed by approximately 200 specialists in three sections: writing, illustrations, and graphics. Publications provides writing and editorial capability, a wide range of illustration talent, and a complete spectrum of graphic services including office copying, offset printing, microfilm, photo-fabrication, photography, and full-scale motion picture production.

The main publications facility is located in the engineering department but, in addition, satellites are operated throughout the division to provide required services at the point of need. Publications' division charter is to provide efficient and economical graphic services for all departments of the division. In meeting these objectives, Pomona graphics people, working with other General Dynamics divisions through a corporate Graphics Standardization Committee, have achieved several significant cost reductions, notably in the areas of office copy equipment and reproduction supplies.

An important part of publications' effort is devoted to the support of the division new business efforts. During the 18 years Pomona division has been in operation, publications has played an active role in every major proposal.



BIG TASK — Collating (top photo) ASMS proposal was spread out over large areas. Center photo: composition group was housed in trailer adjacent to Bldg. 4. Lower photo: during final effort, graphics section was forced to set up work areas in aisles.

'Planning For Profit' Proves Best Seller Engineer Article

Dr. H. E. Trucks, Pomona division senior design engineer (Dept. 6), is author of a magazine article which has set a record in number of individual reprints requested by readers.

The article, entitled "Planning For Profit," was published in a recent issue of Tool and Manufacturing Engineer magazine. That publication's normal supply of tear sheets was soon exhausted and quantities of reprints were necessary to meet the heavy demand of readers.

Data for the articles on economics of manufacturing had been collected by Dr. Trucks over a period of several years. The article's popularity probably stems from the scarcity of this type information, Dr. Trucks said. He received letters and calls from firms, engineering schools and individuals. Requests for copies of the article came from throughout U. S. and abroad.

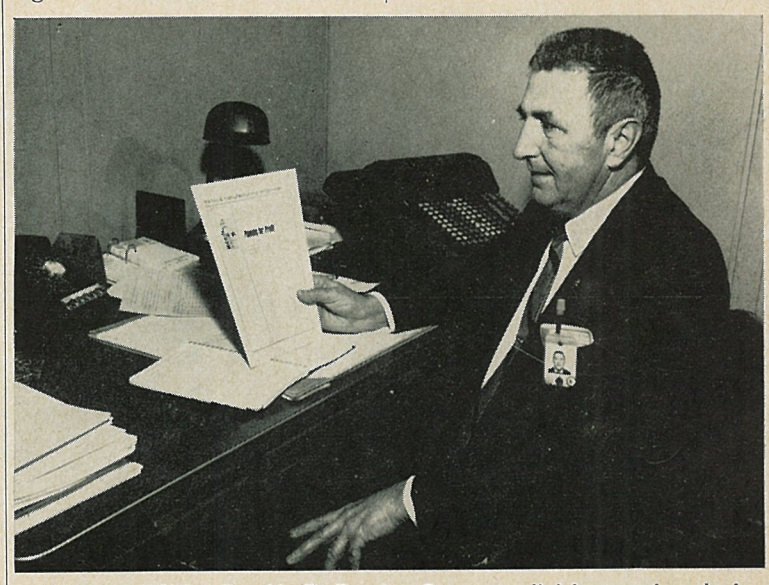
One professor of industrial engineering wrote Dr. Trucks, praising the article and stating: "Your paper emphasizes the important functions to be considered in the operations for production of manufactured items, and, most importantly, it relates these functions to engineering design. If our students can relate tolerances to machine processes to surface finishes — realistically — they can make a much smoother and faster transition from engineering school to industry. Your paper certainly covers these areas most adequately and in a most direct and informative manner."

Designing for function, interchangeability, quality and economy requires a careful study of tolerances, surface finishes, processes and equipment, Dr. Trucks pointed out. His article illustrates the various cost relationships as guides for design engineers.

"Because most manufacturing is highly competitive, the search for ways to reduce cost is never-ending," Dr. Trucks said. "Since a logical starting point for any cost reduction program is the product itself, it behooves the design engineer to consider all alternatives available to him, realizing that economical design is not possible without analyzing probable production costs."

Dr. Trucks has been requested to furnish Tool and Manufacturing Engineer magazine with two additional articles. These will deal with high speed steel for modern machinery. Another, entitled "Design and Cost Factors in Selecting Casting Processes," has been accepted by Precision Metals magazine.

As a result of his writing, Dr. Trucks was selected by Brigham Young University as keynote speaker for its fifth annual on-campus Economy in Design and Manufacture seminar. His talk at that seminar stressed the importance of planning in manufacturing.



TOP ARTICLE—Dr. H. E. Trucks, Pomona division senior design engineer (Dept. 6), has written an article, "Planning for Profit," which set record in number of requests for reprints. Article was published in Tool and Manufacturing Engineer magazine.

Six Apprentices Now in Training

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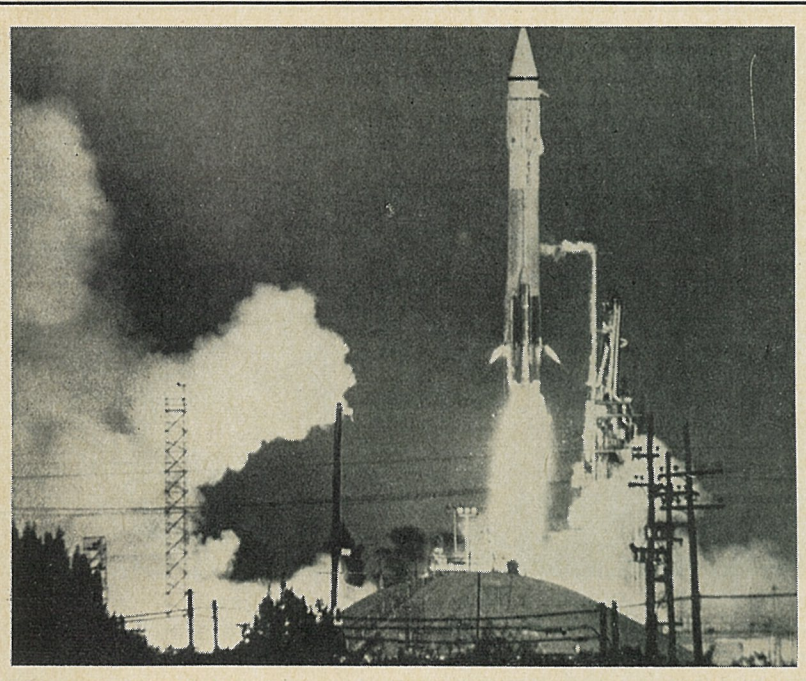
State of California. Provisions of the program conform to state regulations and to requirements of the California Division of Apprentice Standards, Department of Industrial Relations.

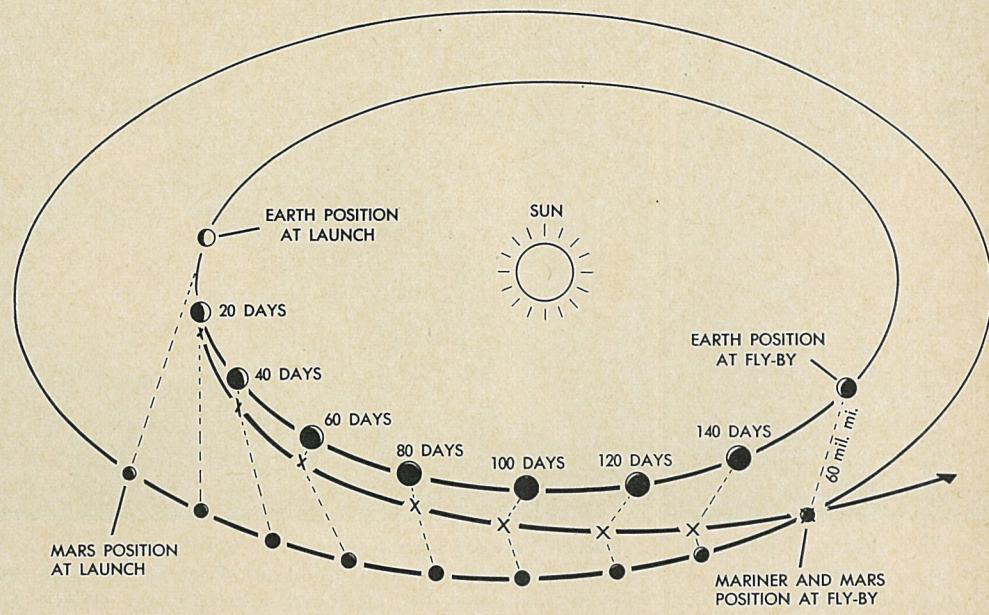
Designed to provide Pomona with skilled and experienced journeymen in their trades, the program consists of 8,000 hours (about four years) of paid on-the-job training and a minimum of five hours per week in college classes on apprentices' own time.

The program is being administered by the Joint Apprentice Committee established to ensure sound training policies. The six committee members are: T. A. Rust (chairman), J. L. McCurdy and L. J. Enfield, employer representatives, E. A. Cox, Marve Greve (secretary) and Earl Goerlick, employe representatives.

C. E. McAvoy, educational services representative for operations and quality assurance, is program coordinator and alternate chairman. Charles S. Booth of Mt. San Antonio College and Jack Frost of Chaffey College serve as school advisers. Michael McKenna of State Division of Apprenticeship Standards is apprenticeship consultant.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.





UP, UP AND AWAY—Steam, smoke and a gleaming Atlas streak skyward as 45th successful flight of an SLV-3 sends Mariner 7 toward rendezvous with planet Mars on Aug. 4. March 27 shot from ETR was second successful Mariner shot this year. Mariner 6 is scheduled to fly by Mars on July 31.

General Manager Named For Electronics Division

Albert G. Daubert has been appointed general manager of the Electronics division of General Dynamics, Roger Lewis, Corporate president, announced.

The position had been vacant since the death of Herman H. Hanink in December, 1968.

Daubert joined General Dynamics after 18 years of man-



ALBERT G. DAUBERT

agerial experience with RCA. Most recently he was manager of product assurance for information systems. His responsibilities included international program management, project management for major installations and specialized systems projects.

From 1963 to 1965 he was manager of communication systems for data processing. Earlier he was manager of RCA's work on the military's AUTODIN (Automatic Digital Network) program, a worldwide communications switching system.

The Electronics division is a major supplier of communication, undersea warfare, navigation, data handling, radar, telemetry and instrumentation systems to the armed forces and the National Aeronautics and Space Administration. Its headquarters are in Rochester, N. Y., and it has major operations at Orlando, Fla., San Diego, Calif., and Avenel, N. J.

Daubert, 47, earned a BS degree in electrical engineering from Drexel Institute of Technology and has done graduate work at Temple University.

★ ★ ★

A new reporting alignment was announced by Roger Lewis, president of General Dynamics, following resignation of John J. Graham, former Corporate group vice president-electronics.

Albert G. Daubert, newly appointed manager of the Electronics division, reports to Algie A. Hendrix, Corporate vice president.

Dause L. Bibby, president of Stromberg-Carlson, and Carl V. Shannon, president of Stromberg DatagraphiX, report to John A. Sargent, Corporate vice president-finance.



COMMANDANT'S VISIT—Admiral Willard J. Smith, U.S. Coast Guard commandant, discusses Convair's ocean data systems programs with W. T. Dorrance, left, director of special programs, and J. W. Petre, chief requirements engineer for Convair marine systems.

Commandant of Coast Guard Pays Visit To Convair, Inspects Ocean Data Station

Adm. Willard J. Smith, commandant of the U.S. Coast Guard, and RAdm. Charles Tighe, commander of the 11th Coast Guard District with headquarters in Long Beach, got a first-hand look at one of Convair's ocean data stations during a brief visit to the Lindbergh Field plant March 20.

Among Convair personnel serving as escorts and briefing the two on ocean data station operations were W. T. Dorrance, director of special programs, J. W. Petre, chief requirements engineer for marine systems, and Robert Devereux, ocean data systems program manager.



TIMELY TIP—Sandy Anderson, publications aide in Convair's Dept. 524-2, points out clocks must be moved ahead an hour as daylight saving time begins at 2 a.m., April 27. You'll get "lost hour" back Oct. 26.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

JAMES H. MASON (1950) from General Dynamics Los Angeles office to Convair division as director of communication; **DON CARLSON** (1959) from Electronics division (Electro Dynamic) to manager of employe compensation, Electric Boat; **GLEN C. EGGEN** (1949) from Convair to Pomona as senior reliability engineer; **DANIEL L. BUELL** (1968) from Convair to Electronics, San Diego as manufacturing development engineer; **JOHN C. PERRY** (1966) from Quincy to supervisor, nuclear testing, Electric Boat; **MANUEL PIMENTAL** (1951) from Quincy to foreman, Electric Boat; **EARL E. GOODWIN** (1963) from Electric Boat to quality group engineer, Fort Worth; **RICHARD K. BYERS** (1959) from Convair to project planning coordinator, Stromberg-Carlson; **ALAN A. GENOSI** (1966) from Electric Boat to Quincy as advanced project engineer; **NORMAN H. BREED** (1956) from Quincy to foreman, Electric Boat; **JUSTIN R. BARTON** (1969) from Corporate Headquarters to Pomona as senior budget analyst; **DONALD L. STEWART** (1966) from Convair to Flextrack-Nodwell, Ltd.; **DONALD A. ALEXANDER** from Electronics, Rochester to Corporate Headquarters; **ROBERT J. BUTERA** (1963) from Electric Boat to senior design engineer, Quincy; **ERNEST C. WALLEY** (1961) from Convair to Canadair, Ltd.; **GEORGE P. DELP** (1960) from Convair to Electronics, Rochester; **WILLIAM D. KRAMER** (1965) from Quincy to senior wage and salary analyst, Electric Boat.

Mariner 6 and 7 Both Racing to Mars Flyby

Atlas-Centaur 19 successfully launched the year's second Mars probe March 27.

It was the 45th consecutive successful Atlas SLV launch.

The space craft, Mariner 7, is due to arrive above the south polar cap of Mars on Aug. 4 five days after the flyby of Mariner 6, which was launched Feb. 24.

The mission objective of both probes is to study the surface and atmosphere of Mars to establish a basis for future experiments in the search for extra terrestrial life.

The launch occurred just after 2:22 p.m. PST March 27 from Pad 36A at Cape Kennedy.

The Atlas and Centaur stages powered the first 9.22 minutes of the flight. Spacecraft separation occurred at 2:35 p.m. PST.

Convair officials at Cape Kennedy for the launch included Andrew Kalitinsky, launch vehicle programs engineering director; Deane Davis, Centaur program manager; Dick Keehn, Atlas Program manager; Walt Hicks, AC-19 program office engineer; A. B. Yanke, flight test group engineer; B. R. Foushee, chief of Centaur systems engineering.

Daniel Sarokon was launch conductor with D. J. Merritt assistant for guidance and control, J. L. Johnson for instrumentation, J. M. Sylvester for electrical systems, and J. M. Kechele for mechanical systems.

Pickering Praises Accuracy of Launch

Dr. William Pickering, director of the Jet Propulsion Laboratory, expressed extreme satisfaction with the accuracy of the AC-19 Mariner 7 launch, even more precise than that of AC-20's launch of Mariner 6.

Robert Benzwi of the Centaur program office, a guest of JPL at its space flight operations center in Pasadena, Calif. during the launch, reported that Dr. Pickering pointed out this is the first time two U.S. space craft were en route to another planet at the same time.

Really Wild

Field Rep's Expense Report Reflects Perils of Saigon Life

All who have struggled with a travel report will sympathize with the plight of R. L. Harriman, field representative of Pomona engineering department's Systems Support and Logistics, following a recent trip to Saigon.

"This is a wild travel report, so I thought I had better give a few explanations," Harriman said in a note attached to the normal report form.

"There are a lot of taxi fares on this expense report because it is impossible to get transportation at Tan Son Nhut (Saigon) except in civilian taxis which charge 50 cents for each trip regardless of distance on the base. The hotel is down in the middle of Saigon and one out of four of the taxi drivers are Viet Cong, by official estimate.

"I stayed in a hotel in Saigon for three nights but I failed to get a receipted bill. While I was checking out some idiot started shooting up the street outside and everybody hit the deck. As soon as the smoke cleared away I got out of there, but I forgot about getting the bill until it was too late to go back.

"Actually Saigon was reasonably quiet, with only sporadic outbursts in the suburbs. The general atmosphere is very depressing because of all the precautions taken against Viet Cong terrorism. All of the hotels and shops have heavy wide screening (like cages) across the front of the lower floors to stop fire bombs and grenades. Most of the hotels have sandbagged machine gun emplacements right in front of the main entrance. These are manned 24 hours a day. There is barbed wire everywhere and at night when the curfew is on, accordian barbed wire is pulled across all of the critical access roads.

"Normally, it is safe to travel in downtown Saigon during the daylight hours. The Viet Cong usually won't risk exposing themselves unless they can nail a fairly large group concentrated in one spot. All in all, you spend a lot of time looking over your shoulder and avoiding crowds.

"I carried a slide projector and tape recorder along to make presentations. They got kicked around quite a bit on the trip, so I picked up a small case to carry them in for protection and ease of transportation. It is the $8 in Item L of the report on 3/15. I couldn't get a receipt because I bought it in a small Vietnamese shop where they couldn't speak English and probably didn't have any sales slip forms even if I could have made them understand that I wanted one."

Needless to say, Pomona's understanding travel office was happy to honor the travel report without receipts under these quite unusual circumstances.

ENGINEERING
partner in rebuilding urban america



Jesus H. Saldana is mail clerk at Pomona division where his tasks include sorting mail on Pony Express mail runs. Saldana returned in February from a tour of duty in Viet Nam, where he served 14 months in Marine Corps. He was born in Lubbock, Texas, completed high school in Anaheim, Calif., and intends to continue his education majoring in police science. His spare time activities include boxing, motorcycle racing, football and horse racing. Before joining Pomona division in 1967, he worked at Douglas Aircraft and North American.



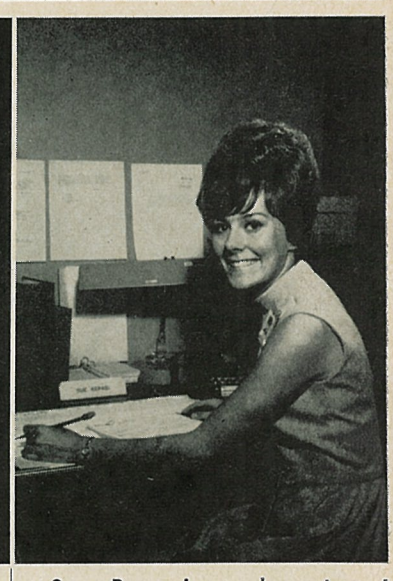
Gilbert Perez is a technician in Pomona's testing area, working with test modules for Standard Missile. He recently returned to the division following a tour of duty in the U.S. Army infantry in Viet Nam. While serving there, he visited an orphanage and joined with other Army personnel to provide a Christmas party. Gil lives in San Bernardino, attended high school there and is currently taking day courses, majoring in electronics, at San Bernardino Valley College. He is working second shift. His spare time activities including playing trumpet and softball.



Gloria Stillinger is secretary in Pomona division operations management service where she maintains personnel records, assignment visible index records, and distribution control material. Before coming to the division's engineering department in 1967, Gloria was employed as stenographer with the Pomona police department and at General Telephone. She was born in Hastings, Neb., but graduated from Pomona High School and attended Mt. San Antonio College, majoring in secretarial sciences. Gloria enjoys skiing, surfing and caring for her two-year-old son, Jeff.



Ron Self is a manufacturing dispatcher at Pomona division on second shift. His job includes checking and reporting production discrepancies in Standard and Redeye missile sections. After completing a year of service with U.S. Army's 1st Infantry Division in Quan Loi, Viet Nam, Ron returned and is taking courses at Citrus College toward a degree in economics. He was treasurer and social chairman of Tau Kappa Epsilon fraternity. In his spare time he enjoys playing handball, golf and tennis. He was born in Los Angeles but attended school in San Diego.



Sue Repasi, a department clerk in support contract administration (Dept. 11), presented a most unusual birth certificate when joining division in 1967. It's in Arabic. She was born in Cairo, Egypt. Her father was a TWA pilot stationed in Middle East. However, she was educated in U.S. and is graduate of Garey High School. At present she is attending business courses at Mt. San Antonio College and looks forward to every opportunity to water ski—her favorite sport. (Birth certificate dilemma was solved when American Consulate supplied English translation.)

Two Complete Engineering Career Development, Given Reassignment

J. L. Schmidt and H. P. Schmid have completed Pomona division's Engineering Career Development program and received assignment, W. J. Morrow, vice president-research and engineering, announced.

Both Schmidt and Schmid were in the second group selected for the Engineering Career Development program in 1967. This is a two-year program individually tailored to each employe's ability and interests as well as the division's current and future needs. Both completed broadening rotational assignments in fields selected to develop individual talent and competence.



H. P. Schmid J. L. Schmidt

Schmidt has been appointed section head of production support. He reports to S. A. Piraino, manager of product effectiveness. Production support groups reporting to Schmidt are special programs and MRB, Army programs and Sycamore Facility, Navy programs, and RFA analysis and technical support.

As a participant in the Engineering Career Development program which he joined in October 1967 from the autopilot and guidance computer section, Schmidt completed assignments in advanced dynamics systems, advanced technology in operations (Dept. 26), integrated logistics support, and systems integration.

Schmid has been assigned as group engineer of advanced missile test equipment, reporting to J. W. Bathke, section head of support equipment development. His new responsibilities involve development of electronic and infrared test equipment for the division's advanced missile program.

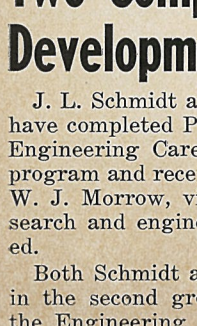
After joining the career development program in August 1967 from support systems design, Schmid has had rotational assignments with electro-optical guidance, military systems support, experimental department, and production/design integration.

Intern Finds A 'Challenge'

Richard R. Rotzow, one of the first group named to the Operations Career Development Program at Pomona division, is finding his early assignments "interesting, challenging and rewarding."

Rotzow hopes his experience will provide an opportunity to learn operation of departments and their inter-relationships.

Objectives of the two-year program are to assure future operations managerial resources by cross training and function-related growth experience. To accomplish these objectives, interns are being exposed to division policies, management practices, and overall functions of each area to which they are assigned.



Richard Rotzow

Rotzow's first assignments in the OCD program have been in Standard Missile production (Dept. 64), operations management services (Dept. 20), and manufacturing engineering (Dept. 24).

A native of Cleveland, Ohio, Rotzow majored in chemistry at UCLA but "spent a great deal of time in social studies and humanities." He received his BS degree in 1966 and immediately joined Pomona division as a manufacturing development analyst. He is a member of the American Chemical Society.

Prior to his selection for the OCD program, Rotzow worked in process development and documentation (Dept. 26) and in solution control (Dept. 24).

He and his wife, Beatrice, live in Ontario, where he is a member of the Elks Club. His favorite recreation is hiking.

Salzman Receives $150 Writing Award

P. K. Salzman, aerothermodynamics section head, is latest to qualify for a $150 Pomona division writing award. His article, "Model for the Shock Huggoniot for Condensed Media," was published in the Jan. 15 issue of The Journal of Chemical Physics.

Jackman Chairs Science Session

Pomona division's K. R. Jackman will be chairman of sessions on "Future of Bio-Engineering in Our Daily Lives" during the Institute of Environmental Sciences 15th annual technical meeting and exposition in Anaheim, April 21-24.

Co-chairman of sessions on bioengineering is Dr. H. E. Von Gierke, chief of the biodynamics and bionics division, Wright-Patterson AFB, Ohio.

Three from Pomona's engineering department will present papers. They are: Dr. Eugene Agalides, "Information processing by electric fishes;" Dr. Sam L. Sparks, "Properties of a biological acoustic transducer;" and T. V. Lewis, "Design and fabrication of ultra-precision devices."

Jackman is co-author with Donald Smith, Animal Training Labs, Buena Park, of a paper entitled "Animal automation, or a monkey is my co-pilot," and with Dr. Von Gierke on a paper, "Bionics and astronautics."

"The Institute of Environmental Sciences is a professional organization of engineers and scientists engaged in measurement and control of the effects on man and equipment of the natural and induced phenomena encountered on earth and in space for the advancement of industry and science," Jackman said. "Objectives of the sessions on 'Future of Bio-Engineering in Our Daily Lives' will be to improve communications and interchange of ideas, technology and instrumentation between engineers, scientists, doctors, biologists and college campuses."

Tours of facilities at the Animal Training Labs and Japanese Village and Deer Park, both at Buena Park, are scheduled April 24.

Sq. Dancers Planning 16th Joint Meeting

CRA Dynamic Eights square dancers will travel to Pomona as guests of Convariety Steppers (PRA square dancers) April 19 marking the 16th consecutive year that the two clubs have held joint dances.

Coincidentally the Steppers are celebrating their 16th anniversary this year.

Dancing is slated to begin at 8 p.m. following a dinner in PRA clubhouse. Ronnie Cupp of West Covina, Calif. will be caller.

On alternate years the Pomona club journeys to San Diego.

High School GED Tests Offer Stepping Stone to Diploma

An accelerated course designed to prepare students for the high school level General Education Development Test will be conducted in-plant at Pomona division beginning May 7.

This GED course could be a stepping stone toward a high school diploma for those who have not finished twelfth grade.

The course will consist of 10 class sessions and will include preparation and the actual general development tests. Class sessions at PRA Clubhouse 4:30-6:30 p.m. are being sponsored by Pomona division in cooperation with Pomona Adult School.

Cost of $8.25 includes textbook and testing fee. J. Ervine of Pomona Adult School will instruct.

Registration deadline for initial course is April 30 and is limited. Future classes will be scheduled as needed.

For information or registration, interested employes should contact Mrs. Annie A. Smith, equal employment opportunity coordinator, personnel employment office, Bldg. 1, ext. 4525; or C. E. McAvoy, educational services representative, Bldg. 2, Col. L-19, ext. 4139.

Filing of Form A Personal Task

Claims for weekly disability payments must be filed by employes directly with the California State Disability Office, H. S. Naish, manager of employe services and safety, reminded last week.

"Employes have sole responsibility for filing state disability claims when they are off because of illness or injury," Naish explained.

"This ruling has been in effect for a number of years, but many employes still lose benefit payments because they fail to apply in time. SP 2-12-1 outlines provisions of the disability payment plan for salaried employes," he said.

Filing must be within 20 days after date of eligibility. Benefits for non-occupational injury or disease begin on the eighth day of disability (or first full day of hospital confinement if prior to the eighth day).

Forms may be obtained from employe services in Bldg. 1 or engineering personnel in Bldg. 4. Many hospitals also have forms available.

Forms for weekly disability payments by the state should not be confused with group insurance claim forms which may also be obtained through employe services outlets, filed out by employes, and completed by a physician.

Conference Planned On Industrial Mgt.

The 17th annual Industrial Management Conference, sponsored by Pomona Valley YMCA Industrial Management Club in cooperation with Mt. San Antonio Junior College, will be held at the school Saturday, April 19. Theme of the 1969 conference is "Management's Responsibility in Our Changing America."

Retirees Plan Ice Show Trip

PRA Retirees will attend an evening performance of the Ice Capades at the Sports Arena Wednesday, May 14, President Elmer Bock announced last week.

Reservations at $5.50 per person will include admission and transportation. A bus will leave the PRA parking lot at 6:30 p.m. The show begins at 8 p.m.

For reservations, members may contact P. C. Watt, 1512 E. 5th St., Sp. 120, Ontario, 91761, telephone 986-1905, or Walter Brunton, 222 E. Foothill, Sp. 1, Pomona, 91767, telephone 593-8807.

Regular meeting will be held in the Clubhouse Wednesday, April 30, 11 a.m., with a social hour preceeding luncheon.

Sergeant Hogue Honored For Heroism

Sgt. Dennis J. Hogue, on military leave from Pomona division test equipment maintenance (Dept. 72), was recently awarded a bronze star by the U. S. Army for heroism during combat operations in Viet Nam.

Hogue moved into intense gunfire to aid a fallen soldier and was instrumental in saving the man's life. He also received a purple heart for wounds sustained in another action.

Hogue entered military service last year. He is currently hospitalized with injuries in Viet Nam but is expected to return to California in the near future.



COMMUNICATORS—Claire Fournier, left, and Vicki Underwood man new 24-hour message center in Pomona division's supplier control quality assurance group. Thirty-six quality assurance representatives, located throughout country, use center daily to keep information moving between division and its suppliers.

24-Hour Message Center Opens For Supplier QA Field Men

Pomona's Supplier Control Assurance Group has established a new 24-hour message center phone system for better communications between QA/Reps in the field and the division, H. J. Stuart, director of quality assurance, announced last week.

The Supplier Control Quality Assurance Group, headed by John S. Schulz, supports 36 field men scattered throughout the U. S. The group is part of Purchased Material Quality of which A. C. Villere is manager.

Organizational structure of the Supplier Control Quality Assurance Group has been streamlined to provide nationwide communication for coverage of supplier firms by QARs and to reduce telephone costs.

Vicki Underwood has a daily job of phoning each QAR and assuring that his message is recorded on tape at Pomona. The daily QAR mesages are then routed throughout the division to those individuals, groups and departments concerned and answers obtained for relay back to the field.

Typical items recorded through the telephone message center include special problems, corrective action, schedules, memos for Engineering, Purchasing or others, and special requests.

Use of this new communications procedure allows a single phone call to establish contact with the many points at the division the QAR must reach, and eliminates separate calls.

Others in the Supplier Control Quality Assurance Group involved in support of the field QARs are: Claire Fournier, stenographer; Ron Brothers, office administrative function leader; Carole Vaughn, budget analyst; Curt Claybrook, logistics coordinator; Joe Brown, problem reporting and corrective action.

Flyers Plan Second Ground School Class

Dynair Flying Club is offering a second aviation ground school training class to begin Wednesday, April 30, 7-9:30 p.m. in the PRA Clubhouse.

The six-week course is free to those preparing for Federal Aviation Agency's written examination for private pilot licenses and as a refresher course for pilots already having airman ratings. The course is restricted to junior high school age and older.

Chief instructor is Jack Peterson of Pomona division contracts.

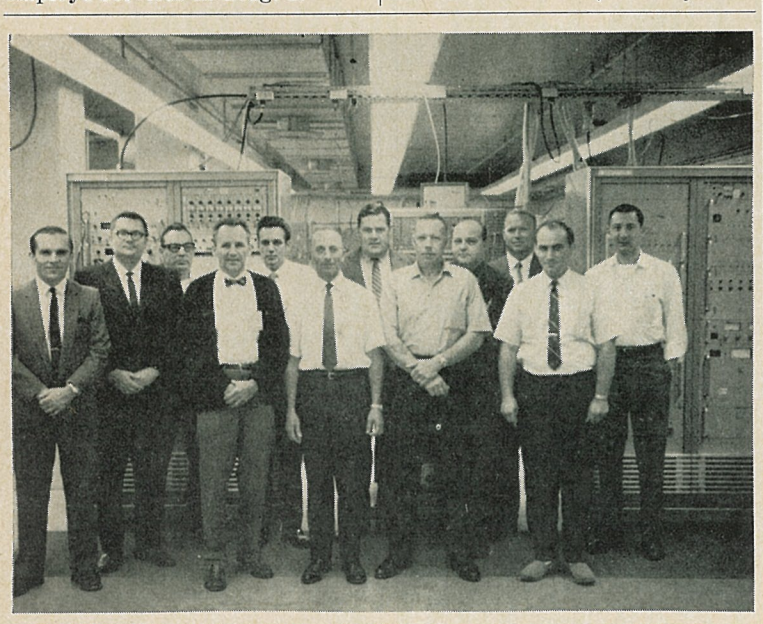
'69 Annual Report Copies Available

Copies of General Dynamics' annual report for 1969 are now available for employes, H. S. Naish, manager of employe services and safety, announced. The reports may be obtained at engineering personnel in Bldg. 4 or employe services in Bldg. 1.

Rockhounds Switch To Tick Canyon Site

Hazardous conditions resulted in the canceling of PRA Rockhounds trip to Twentynine Palms Marine Corps base this weekend (April 19-20). Instead, a field trip to Tick Canyon is scheduled, Commissioner Lew Kelley announced.

Distance from Pomona is approximately 75 miles and access roads to the camp are paved. To reach the camp, located on Davenport Road east of Old Highway 6, Rockhounds should take the Palmdale turnoff from Golden State Freeway. "Material available is howlite, but picks and shovels are needed," Kelley said.



STANDARD ARM CLASS—Key Navy personnel attended a three-week course in maintenance and operation of field missile system test equipment for Standard ARM conducted by Pomona division customer training instructors at Fallbrook. From left: Instructors G. A. Whiteman and B. G. Boegh, A. H. Sanders of Point Mugu, E. J. Paklow, R. K. Lewis and G. E. Evans of Fallbrook, Instructor E. D. Bowen, R. T. Price of Point Mugu, J. Korawek of Fallbrook, Instructor H. C. Stowers, J. F. Delutis of Fallbrook and J. R. Schatz of Point Mugu.

Coineers Will Hear Talk on Quarters

Dan Harley of Claremont will discuss Liberty Quarters and highlight his talk with a personal display at a PRA Coin Club meeting April 25, 8 p.m. in the Clubhouse.

Mrs. Nona Moore of Fontana discussed display arranging to impart numismatic information and acquire maximum eye appeal and neatness at a March 28 meeting. She was presented a set of Coin Club medals.

Forty-eight members and guests attended the meeting with 12 offering displays for evaluation. Commissioner Ethel Lenhert won with Zodiac Medals.

Door prizes were won by Stanley Shinsky, 1968 proof set; R. N. Johnson, silver story set; H. W. Grazul, 1898 silver dollar; Nona Moore, 1969-S proof cent. Other winners were Xenia Kreizel, Wayne Hood and Art Woodruff.

The meeting was concluded with a coin auction conducted by Marlin Lenhert.

Mgt. Club Schedules Tourney at Hesperia

Pomona Management Club's second golf tournament of 1969 will be played at the Hesperia Country Club on Saturday, May 3, Chairman Dick Ashby announced.

Prizes will be awarded in special putting, longest drive, and closest to hole contests and for individual low gross and team net scores. Golfers without approved handicaps can play in a separate Calloway-system flight. A special tournament is planned for wives.

Entry deadline is April 25. Questions should be referred to Ashby, ext. 4109, zone 4-2, or Dan Callis, ext. 8628, zone 21-1.

Volleyballers Get Second PRA Court

A second volleyball court is being provided in the PRA Fieldhouse, Commissioner John Barber announced last week.

"Volleyball is for every age group and so many employes and their families have become interested that a single court is no longer adequate," Dick Thorpe, acting instructor, explained.

"The new arrangement will allow advanced enthusiasts to play on one court while beginners receive instruction on the other."

Instruction and practice in fundamentals of ball-handling and court play is offered at 6:30 p.m. each Wednesday. Open play is from 7 to 8:30 p.m.

Pipe Band, Dancers Plan Performances

General Dynamic's Pipe Band and Dancers will entertain with traditional Scottish music and folk dances from 1 to 2 p.m. April 19 in Montclair Plaza.

Next month, the group will lead an annual Memorial Day parade at 10 a.m. May 30 at Glendora's Oakdale Cemetery.

Band members and dancers are practicing in the PRA area Summerhouse every Wednesday — in separate groups at 6:30 p.m. and together at 7:30. Commissioner Jim Dick said the group welcomes new pipers, drummers, and dancers.

Employes are invited to visit the Wednesday practice sessions.

Camping Club Plans Trip to Twin Lakes

Overwhelming response to PRA Camping Club's annual trip to Joshua Tree National Park has prompted Commissioner Elroy Kalinke to schedule a follow-up trip to Twin Lakes near Daggett.

"Enthusiastic campers are always welcome to join our group," Kalinke said. Employes and their families and friends are invited. For information contact Kalinke, ext. 273.



BRONZE BOOT—Five PRA Skiers outraced Mt. Baldy Ski Club recently to win bronze boot perpetual trophy. Trophy was presented to Commissioner Chuck Rue (second from left) by Gene Sarno, Far West Ski Association representative. Racers are, from left. Bob Stratton, Rue, Bob Montei, Sarno and Tom Galbos. Not present, Virgil Lovitt.

Novice Golf Classes Open For Men, Too

PRA-sponsored beginner golf lessons at Palm Lakes Golf Course are not exclusively for women. Couples are invited and men are welcome to join classes beginning Monday, April 28, 4:15 p.m. and 5:15 p.m.

"Registration for the lessons may be made at the pro shop and are in no way restricted," Commissioner Virginia Anderson explained. A fee of $1.50 per lesson includes a half hour of instruction, a bucket of balls, and a round of golf.

GURR COMPLETES QUALITY COURSE

F. F. Gurr, Pomona division reliability specialist, last month completed a one-week course entitled "Quality Control Management." The special short course was conducted at the Ambassador Hotel in Los Angeles March 10-14.

PRA Calendar

(Pomona Recreation Association sponsors 28 activities for employes and their families. All meetings listed below held in PRA Clubhouse unless otherwise noted. For further information contact PRA Secretary Jackie Daoust, ext. 208.)

★ ★ ★

ARCHERY—Shoot Saturday, April 26, 9 a.m., on Archery Range.

BRIDGE CLUB—Monday evening tournaments 7:30 p.m.

CAMERA CLUB—Meeting Thursday, April 24, 8 p.m.

CERAMICS—Workshop open each Thursday, 7-10 p.m.

COIN CLUB—Meeting Friday, April 25, 8 p.m.

FISHING—Monthly fishing contest forms available from PRA Secretary Jackie Daoust, Bldg. 1, RM. 112, ext. 208 or Commissioner Bill Nittler, ext. 6218.

GD PIPE BAND AND DANCERS—Band practice 7:30-9:30 p.m. every Wednesday in Fieldhouse. Drum lessons 6:30-7:30 p.m. every Wednesday in Summerhouse. Highland dancing (all groups) 6:30-7:30 p.m. every Wednesday in Ballroom.

GOLF—Women's Spring Roundup tournament Saturday, May 17, 11 a.m., Ontario National Golf Course. Scotch tournament Saturday, May 24, Jurupa Hills. Beginners classes start Monday, April 28.

HANDBALL—Reservations to use indoor courts may be made by signing with John Barber a day prior to expected playing time.

ICE SKATING—Individual and group instruction offered at 6:30 p.m. every Wednesday, Ice Bowl, 1225 W. Holt, Ontario. Rink opens for practice at 6 p.m. Adults $1; children 35c (including skates).

RETIREE CLUB—Meeting and luncheon Wednesday, April 30, 11 a.m. Trip to Ice Capades Wednesday, May 14. Transportation by bus from PRA parking lot.

ROCKHOUNDS—Field trip to Tick Canyon, April 19-20. Chuck Wagon Breakfast, May 18.

SKI CLUB—Annual Sno Ball Saturday, May 17.

SPECIAL ACTIVITY—Children's Saturday Cinema April 19, 10 a.m. in Fieldhouse. Pomona Division Night at Disneyland, Friday, May 23, 8 p.m.-1 a.m.

SQUARE DANCING—Club will host San Diego Dynamic Eights Saturday, April 19 for dinner and dancing.

STAMP CLUB—Meeting Friday, April 18, 8 p.m.

VOLLEYBALL—Beginner and advanced play each Wednesday, 6:30 p.m., Fieldhouse, for both men and women.

WOMEN'S ACTIVITY—Knit-Wits meet Tuesday, April 22, 7:30 p.m. Women's physical fitness each Monday and Wednesday 4-7 p.m., and Tuesday and Thursday 1:30-3 p.m. in Fieldhouse.

Spring Turns Skiers' Thoughts to Bowling

With onset of spring's warm weather, PRA Skiers are turning to bowling. A 12-week mixed-four league will begin Wednesday, May 7, 7 p.m., at the Bowlium in Montclair. Club President Helmuth Beutel, ext. 8139, is taking names to form teams.

Members are reminded that this Friday (April 18) is the final day to vote for club officers. Next Tuesday (April 22) a dinner meeting will be held at Bavarian Hofbrau Haus on Alosta in Glendora. Following dinner two films, "Ski Alberta" and "Where Winter's a Pleasure," will be shown.

Lee Bisson Wins Havasu Log Race

PRA Boat Club members encountered beautiful weather on an outing to Havasu Cove on the Colorado River last month, Commissioner John McCurdy reports.

Lee Bisson won a predicted log race. Bill King was second and Earl Fowlkes third.

Al Syfert was top fisherman and Walt Crutchfield was runner-up. McCurdy served as crew chief for the outing.



SHOOTERS' SESSION—New PRA Gun Club officers, shown with shotgun shell-loading setup in club trailer, are, from left, Chuck Cheeseboro, president; Joe Karp, past president; Allen Wilkison, treasurer; John Miller, vice president. Cheeseboro said group will continue to strive for high level of interest and participation in club activities.

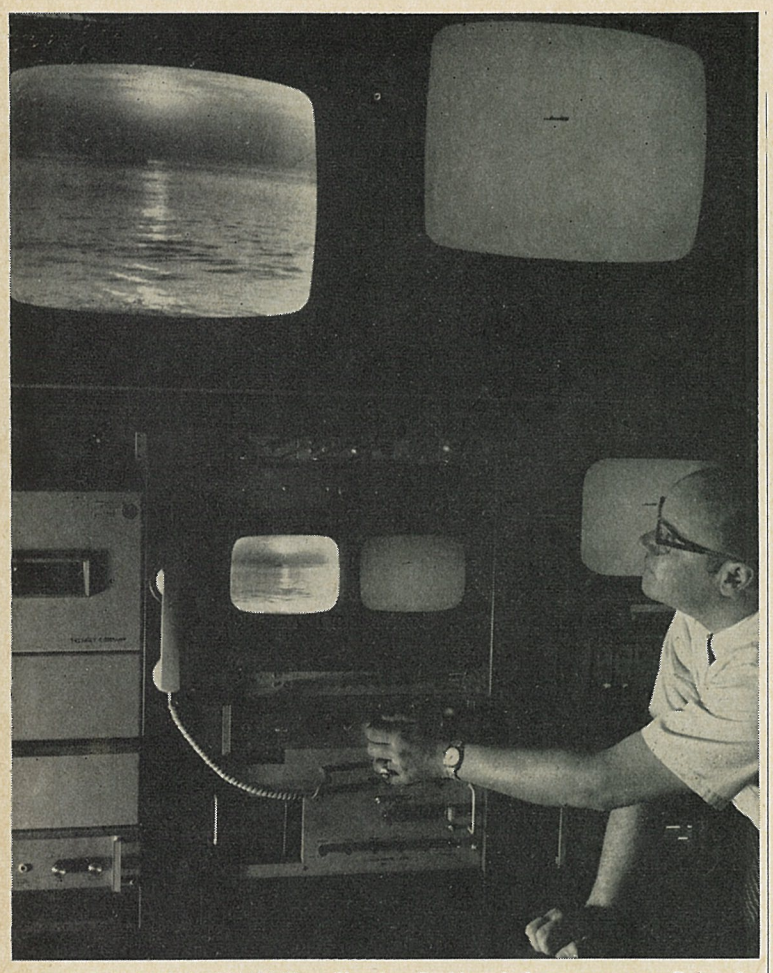


IMAGE ENHANCEMENT—Charles DeMund demonstrates Convair-developed TV system for isolating objects of selected shapes from picture background. TV monitors at left show marine scene while in those at right everything has been filtered out except fishing vessel.

'Signal Enhancement' Singles Out 'Targets'

Convair division has taught a television system to find the proverbial "needle in a haystack."

Video processing equipment for "signal enhancement" developed by the division for use with standard TV cameras can remove all elements or shapes from a scene except those that have been programmed to remain.

The system currently is being used for scanning radiographs of composite materials being developed in division-funded research and development studies.

Through use of selected process filters, only those tiny filaments that are broken or are out of normal alignment show up on the TV monitor. All background elements in normal alignment are "dropped out" of the processed image.

The proprietary Convair system has been perfected by Charles N. DeMund, a photographic specialist in motion pictures and television Dept. 516-0.

An image of almost any shape can be detected electronically and its image enhanced and separated from background "clutter."

The system has potential applications ranging from automatic scanning of reconnaissance photos to enhancing underwater television images.

DeMund said the video enhancement and processing technique can be adapted for automatic scanning of radiographs or other types of pictures. An automatic scan stop or alarm signal can be used to alert the operator to programmed-image detection as it occurs.

The system can be operated in "real time" at standard television scanning rates. Previous methods of dissecting video signals required processing such signals by computer at slower rates.

A "processed" picture, when desired, can be superimposed over the unprocessed scene from which it has been taken to pinpoint location of detected elements on the original.

DeMund has been assisted in development of the system by Wallace Henshaw, Complex 39 operational TV system assistant manager, and James Black, a Dept. 516-0 photographic specialist. Work on the system has been under way on a part-time basis about three years.

Robert T. Anderson, a senior research engineer in process development Dept. 572-2, said use of the TV image enhancement system has eliminated slow and tiresome use of a magnifying glass to scan radiographs of the aluminum-boron composite test specimens.

"Through real time video processing, the images of normal elements are eliminated and all misplaced and broken filaments appear as white lines and dots on the screen," he said.

"With the video system a large area can be magnified and scanned at once. With a magnifying glass, only about a ½-inch-diameter field could be examined at one time in an extremely tedious and time-consuming process."

Anderson also has used the TV enhancement system to locate tiny defects and porosities in aluminum welds.

Background below a pre-set density level is filtered out and the "processed" image enlarged to show microscopic defects within the weld.

The defects, appearing in black on a white screen or white on a black screen, can be located and measured quickly.

Anderson said the TV system also should be beneficial in analysis of data from other forms of non-destructive testing.

Convair also has capability for "digitizing" TV signals for processing by digital computer. In that system, a TV camera scans an X-ray negative and optical density is translated and recorded on magnetic tape for subsequent computer processing.

DeMund has been with Convair 11 years and was employed five years previously in the KOOL-TV production department in Phoenix. He filmed John Glenn's recovery in the Atlantic for the Convair-produced documentary "Friendship 7."

SD Men Contribute To Fractures Work

Two Convair men, Dr. N. R. Adsit and W. E. Witzell of Dept. 572 have written a paper on the "temperature effects on fracture" which has been included as a chapter in the most complete treatise on fractures yet written, the seven-volume "Fractures: An Advanced Treatise," edited by Harold Liebowitz.

In addition, Witzell recently received a letter from John A. Fellows, director of technical programming for the American Society of Metals, expressing "warm thanks . . . for your important share in making the 1969 WESTEC Conference a real success."

Many Defer Distribution Of Savings Plan Funds

Of 11,000 "charter members" of the General Dynamics Savings and Stock Investment Plan, 45 per cent chose to leave their 1965 savings and earnings in the plan while 55 per cent requested and received "short term distribution" in February of cash and securities totaling $2,050,118 in value.

"Charter members" were salaried employes at most of GD's division/subsidiaries. They were the first to have an opportunity to join the Plan, in September, 1965. The distribution for 1965, therefore, included savings, earnings and General Dynamics' contributions (50 cents for every $1 saved) covering only three months of that year.

The short term distribution included $1,237,038 in employe savings, $618,515 in GD contributions, and earnings to Dec. 31, 1968 of $194,561.

The $2,050,118 total was composed of 6,339 shares of GD common stock and a cash payout of $1,757,724. Cash reflected investment in government bonds valued at $782,158, a diversified portfolio account with market value of $893,823, and fractional shares of GD stock valued at $81,743.

Algie A. Hendrix, Corporate vice president, said overall return was equivalent to earnings 65¾ cents for every $1 invested by members.

Each employe's investment increase in the plan, of course, was dependent on performance of the plan option he had chosen.

Hendrix said 1965 accounts not withdrawn were reinvested by Bankers Trust Co., trustee, and will continue to earn dividends and/or interest.

"Company contributions for these deferred 1965 accounts are now vested," he said. "This means those members who left their 1965 contributions and earnings in the Plan now have a permanent, non-forfeitable right to the company contributions for 1965."

Approximately 75 per cent of General Dynamics eligible salaried employes are now saving an average of 7.5 per cent of their salaries through the Plan.

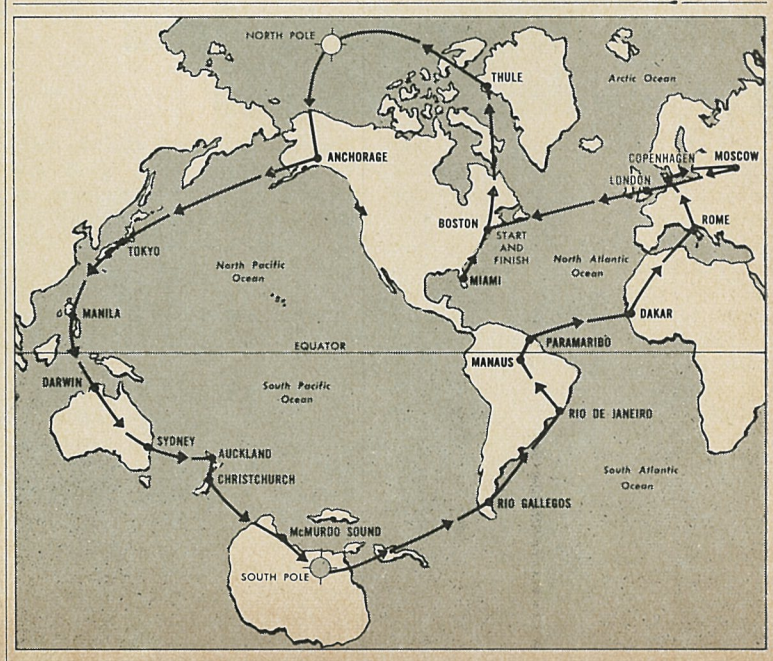
"This is an excellent program for systematic savings and, in addition, provides opportunities for our employes to become General Dynamics shareholders," Hendrix said.

Eligible employes with more than one year of continuous service may enroll in the Savings and Stock Investment Plan by completing an application and returning it to the appropriate industrial relations office at least 30 days prior to any quarterly enrollment date. The enrollment dates are Jan. 1, April 1, July 1, and Oct. 1.

30,000 Now Saving In Investment Plan

More than 30,000 General Dynamics employes now are saving regularly as members of the Savings and Stock Investment Plan.

Of these, 19,500 are hourly employes whose average contribution to the Plan (in which General Dynamics adds 50 cents to every $1 saved) is 5.32 per cent of wages.



ROUTE—Shown is route flown by Convair 990 carrying 63 passengers (at $10,000 each) on special "air cruise."



ON THE ICE—Polar Byrd I passengers pose on ice runway of McMurdo Sound before crossing South Pole.

$10,000 a Passenger

Convair 990 Flies Over Both Poles

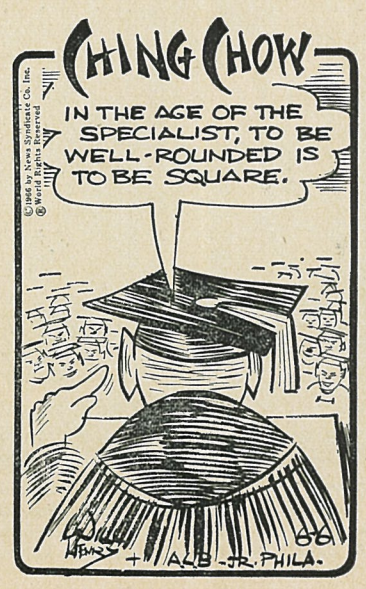
A six-year-old Convair 990 recently flew 63 passengers on a 40,000 mile world-spanning journey by way of both polar ice caps to make the first trans-polar flight "around" the globe.

Christened "Polar Byrd I," the Modern Air Transport plane made the history-making jaunt last November. The chartered flight was completed in 26 days, touching all six continents and flying over both poles while visiting 19 world cities including Moscow, USSR.

The Convair-built craft was specially outfitted by Modern Air to provide sleeping and leisure quarters for the corporation presidents, board chairmen, doctors, lawyers and retired businessmen who paid $10,000 apiece for the trip.

Itinerary for the "global vacation" included hunting and fishing in such places as the Brazilian Amazon and Australian bush country! The vacationing sportsmen stalked kangaroo, wild boar and buffalo in Australia and searched for alligator along the Amazon. Foregoing their hunting activities, the world travellers frollicked with the seals on the Antarctic ice cap.

Other highlights of the flight included diplomatic receptions in world capitals, an audience with the Pope in Vatican City and a side trip to the Russian capital. (This was the first commercial charter flight ever permitted inside the Soviet Union.)



The veteran Convair plane performed admirably, according to Modern Air officials. Her skins still gleamed after weathering world climates from equatorial tropics to sub-zero polar ice.

Within hours of the flight the jetliner, reconfigured to its normal capacity, rejoined Modern Air's world flight schedule.

Modern Air Transport was chartered for the flight by Admiral Richard E. Byrd Polar Center in Boston, Mass. whose members made up most of the passenger list.

Modern Air is a Miami, Fla. based line and operates five Convair 990s. They are currently negotiating for future "polar flights" to take off from both the U. S. and Canada.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 8 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 16, 1969



CONTRACT SIGNING—Members of the Convair and International Association of Machinists negotiating teams get together just prior to signing new three-year contract between Convair and IAM. From left, standing, are: E. P. Osgood, Robert Doran and R. A. Schultz, all of IAM; Roger Brown, Convair manager of compensation. From left, seated, are: L. K. Dascenzo, IAM; A. J. Baffone, president and directing business representative, District 50, IAM; M. V. Wisdom, Convair director of industrial relations and company spokesman; B. A. Kulchin, Convair chief of labor relations.

New Labor Pact Signed With IAM

A new labor agreement between Convair and the International Association of Machinists went into effect March 31.

Assuring labor stability for the next three years, the agreement was termed a "breakthrough in aerospace labor-management relations," by Jack L. Bowers, Convair general manager.

"Without threat of strike action and with a year remaining in the previous contract, the company and the union agreed to new contract terms which will be more responsive to our employes, the union and changes in the economy," Bowers said.

Affected are approximately 7,600 Convair employes, including more than 600 non-represented hourly employes.

According to M. V. Wisdom, director of industrial relations, the union had asked that discussions be held early in view of changes in the economy and other aerospace settlements.

The company agreed to discussions last fall and agreement was reached after a series of conferences.

Wisdom said the agreement may be without precedent in the aerospace industry. Because it was negotiated early, it was worked out without threat of strike or lockout, a situation genuinely beneficial to both union and management.

The company negotiating team was headed by Wisdom, as spokesman, and included W. L. Van Horn, director of operations, F. D. Robbins, manager of production control, B. A. Kulchin, chief of labor relations, R. W. Brown, manager of compensation, and P. F. Veal, chief of industrial relations, Lindbergh Field Plant and AF Plant 19.

Negotiating for the union were A. J. Baffone, spokesman and president and directing business representative, District 50, F. C. Brown, grand lodge representative, L. K. Dascenzo, R. A. Schultz, E. P. Osgood, Robert Doran, and R. Ihrig, Mel Gee representing Vandenberg, J. Matthews and T. Stevenson representing ETR.

The contract calls for wage boosts from 20 cents to 43 cents an hour. In addition, 18 cents an hour previously paid as a cost of living adjustment will now be incorporated into the basic wage scale.

The agreement also provides for 3 per cent general increases in the second and third years of the contract.

Besides incorporating the present cost of living adjustment into the basic scale, the contract provides cost of living adjustments for the second and third years of not less than 3c per hour nor more than eight cents per hour for each year, except that the three cents minimum for the second year will be diverted to provide partial funding for a new dental plan. This means a minimum additional increase of three cents and a maximum of thirteen cents during this three year contract.

Group insurance benefits have been improved. Daily hospital room and board coverage was increased from $32 to $46. It will be increased to $48 in April 1970 and $50 in April 1971.

Other benefits to be implemented during the life of the contract will be a higher schedule of surgical benefits, improvements in hospital extras such as laboratory work and operating room benefits, and increase of major medical benefits.

As of Oct. 11, 1970, the company will pay the full cost for dependent insurance with the employe contribution no longer being required.

One of the new features provided is a dental plan which will go into operation Jan. 1, 1970. This will be a comprehensive program covering most normal dental procedures. There will be a $25 deductible per employe or dependent per year after which the plan will cover 80 per cent of most bills. The co-insurance factor on

(Continued on Page 2)

Electronics-SD Club to Hear Olympic Champ

Billy Mills, first American in history to win the Olympic 10,000-meter run, will describe the 1968 Olympic Games at a meeting of the Electronics-SD Managment Club this evening (April 16) in the VFW Hall at 1035 19th St.

Mills established a new record for the event in the 1964 Olympics in Tokyo. He served as an advisor for U. S. distance runners in the 1968 Olympics in Mexico City.

A no-host social hour is scheduled at 5:30 p.m. with steak and lobster dinner at 6:30.

Electronics - SD Management Club also has announced dates, locations, and names of guest speakers for upcoming meetings.

Rep. Bob Wilson (R-San Diego) will speak on the House Armed Services Committee at a May 16 meeting at Peter's Hofbrau in Point Loma.

Dr. John R. Van de Water, president of a management consultant firm, will have "Effective Use of Our Minds" as topic for his address at a June 11 meeting in the Atlantis restaurant.

A "sports night" picnic and baseball game is scheduled July 11 at San Diego Stadium.

Science Students Given Plant Tour

Students from the Greater San Diego Science Fair toured the Kearny Mesa plant April 11, as part of the fair program.

Among Convair officials participating in the fair were Jack L. Bowers, Convair general manager, who served on the board of governors and Jack Croft and Everett Lindem on the management committee.

Those on the judging teams from Convair were: Dr. William Schart, H. W. Buckner, James Brady, D. W. Vorbeck, Ray McIntyre, Edward Schwartz, Samuel Kaye, Dr. John Neu, M. D. Campbell, Bill Martin, Dr. Michael Griggs, Gerald O'Barr, Lloyd Munson, Robert G. Shevlin, Jack Grace, Dr. Jack Maughmer and John Rhamy.

Craftsmanship Goals Exceeded by 25 Depts.

Twenty-five Convair division departments are being presented "Sustained Performance" award plaques for meeting or exceeding defect-reduction goals in the division's Craftsmanship Program during the last half of last year.

Thirteen departments from Lindbergh Field plant and Plant 19 received awards from Jack L. Bowers, Convair general manager, in a combined ceremony at LF attended by more than 200 representative employes.

Ceremonies for the other departments were scheduled at Kearny Mesa, Vandenberg AFB, and the Eastern Test Range (ETR).

Goals for each of the departments represented 20 per cent improvement over actual 1967 performance records.

Bowers commended the "Sustained Performance" award winners for "having tough goals — and beating them."

He pointed out that the division for two consecutive years in 1967 and 1968 had exceeded 20 per cent performance improvement over the previous year and will have to keep working hard to maintain that level of Craftsmanship.

"The ultimate and final proof is in the products we deliver," he emphasized.

Bowers said the division has established a good record for C-5 empennages delivered to date under subcontract from Lockheed-Georgia Co. and pointed out that the recent Atlas-Centaur 19 mission that sent a Mariner spacecraft for Mars flyby marked the 45th consecutive successful launch of an Atlas space launch vehicle.

Following is a list of the award winning departments:

Dept. 001 — sheet metal, LF; reduced defects to 26.2 per 1,000 manhours; goal of 39.5 exceeded by 34 per cent.

Dept. 002 — processing and welding, LF; reduced defects to 22.6 per 1,000 manhours; goal of 37.9 exceeded by 40 per cent.

Dept. 015 — machine shop, LF; reduced defects to 23.6 per 1,000 manhours; goal of 27 exceeded by 13 per cent.

Dept. 016 — electric bench, LF; reduced defects to 4.4 per 1,000 manhours; goal of 5.3 exceeded by 17 per cent.

Dept. 019 — metalbond and plastic trim, LF; reduced defects to 11.6 per 1,000 manhours; goal of 19.7 exceeded by 41 per cent.

Dept. 031 — experimental, LF; reduced defects to .3 per 1,000 manhours; goal of .8 exceeded by 63 per cent.

Dept. 045 — C-5 empennage assembly, LF; reduced defects to 12.1 per 1,000 manhours; goal of 18.6 exceeded by 35 per cent.

Dept. 049—non-current spares, LF; reduced defects to 2.3 per 1,000 manhours; goal of 6.8 exceeded by 66 per cent.

Dept. 401 — tool manufacturing, LF; reduced defects to 13.7 per 1,000 manhours; goal of 19 exceeded by 28 per cent.

Dept. 420 — planning audit, KM; reduced discrepancies to 1.7 per 100 pages; goal of 2.4 exceeded by 29.2 per cent.

Dept. 518 — graphic reproduction; reduced defects to 94.9 per 1,000 manhours; goal of 96.8 exceeded by 2 per cent.

(Continued on Page 2)



CRAFTSMANSHIP HONORS—Thirteen Convair departments at Lindbergh Field and AF Plant 19 received "Sustained Performance" awards in recent ceremony. Accepting for departments, from left, were Jim Duffy, Dept. 401; Don Berhow, Dept. 840; Bill Wolfe, Depts. 002 and 049; Joe Merk, Dept. 759; Willard Martin, Dept. 031; Paul Franks, Dept. 836; John Ruzich, Dept. 833-2; Carl Banke, Dept. 015; Ken Walker, Dept. 001; Paul Pearson, Dept. 016, 019, and 045. Jack L. Bowers, Convair general manager, at podium, commended winning departments on their performance.

Cook, Woodle Seek Office

Nominees for new officers for Convair Management Club were announced by the nominating committee and ratified by membership vote at the March meeting.

Ballots will be mailed early next week and are to be returned by May 16. Election results will be announced at the club's May 24 Spring Dance in the Balboa Park Club. New officers will be installed at the June 11 dinner meeting.

Nominees, by office, are:

President—J. E. Cook and Roy Woodle.

First vice president — R. A. Ames and H. B. Day.

Second vice president — C. B. Simmons and J. H. Wills.

Recording secretary — G. W. Cowan and T. W. Ochodnicky.

Financial secretary—A. E. Divine and M. W. Rickling.

Treasurer—J. H. Aubrey and J. A. Dematteis.

One-year board of control (three to be elected)—R. J. Connell Sr., C. A. Johnston, J. M. Bowers, H. W. Burns, R. A. Calen, Cy Campbell, D. E. Evanson, Terry Kell, and E. E. Miller.

Two-year board of control (one to be elected)—R. J. Archibald, W. J. Durflinger, G. E. Garrison, and T. P. Dougherty.

Three-year board of control (two to be elected)—Norvell Freeman, Art Medrano, R. W. Miller, Fred Shepard, and J. Q. A. Wickham.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between April 1 and April 15.

Thirty-year: Dept. 002, F. L. Schneider; 031, W. C. Roberts; 250, G. A. DeMarino; 401, E. F. Gurling; 553, A. B. Mandeville; 582, M. Dublin; 999, P. W. Kessler.

Twenty-five-year: Dept. 130, Lois W. Tenwolde; 250, H. Lund; 515, L. J. Solheid; 531, D. M. Feeney; 780, Frances E. Ciprian.

Twenty-year: Dept. 002, J. L. Bloomfield, R. G. Russ; 015, N. P. Kuntz; 059, R. A. Johnston; 144, Evelyn M. Kaczka, H. H. Mishler, M. P. Riggs; 511, H. C. Jackson Jr.; B. L. Henry.

Fifteen-year: Dept. 015, H. Morrow; 031, A. Gamboa; 130, D. L. Watson; 142, F. C. Thompson; 143, R. R. Robinson; 250, C. J. Collins, S. Stokes; 508, B. Maddow; 562, H. Pallulat; 578, J. D. Fickett; 761, M. R. Hawley; 780, R. M. Gallego; 832, L. L. Collins; 985, J. J. Olivarria.

Ten-year: Dept. 014, V. J. Pietruszka; 027, R. B. Rosenthal; 101, Doris E. Beird; 110, D. S. McHargue; 130, E. B. Cox; 140, S. Engelman, E. A. Gentles; 142, Dorthie W. Yakey; 143, J. A. Neal; 144, G. E. Flarity, J. H. Godwin; 170, A. Bataller Jr.; 198, G. Palma; 250, W. C. Downs, W. D. O'Neal; 401, W. G. Shultz, D. D. Stephenson; 511, F. E. Staten; 518, Elizabeth M. Wright; 524, Barbara D. Clute; 532, T. C. Prebys; 533, C. F. McLean III; 561, F. E. Pearce; 572, R. W. Tryon; 574, R. E. Wisma; 581, J. A. Fager; 595, R. F. Hoeft; 731, R. W. Reed; 732, H. E. Sloan; 958, R. B. Petersen; 962, L. A. Hagloch, D. W. Stein; 963, R. M. Williams; 979, D. L. Moore; 985, T. A. Bianchi; 986, Rita Bonnell.

ELECTRONICS

Ten-year: Dept. 205, Joyce I. Oviatt; 562, G. B. McPherson.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending March 28.

Dept. 780, H. D. Akers, 143, D. G. Longbottom, $12.30 each (joint award); 553 D. W. Alsop, $15; 031, C. Andrade, $15; 027, A. R. Anderson, $202 (two awards); 149, D. S. Arnott, $15; 820, G. Axt, 144, L. G. Menches, 149, E. Yannaccone, $5 each (joint award); 524, H. D. Bernard, H. H. Richter, $7.50 each (joint award); 143, A. C. Bailor, $20.50; 143, S. I. Beadle, $81.50; 031, E. D. Brannon, $100.20; 031, G. A. Dewey, $127.80; 780, T. C. Ekles, $74.50; 836, L. W. Follett, $15; 015, J. S. Fowler, $15; 144, G. A. Gibbons, $28; 543, R. D. Gilfillan, $101.10; 250, T. F. Gurbacki, $15; 756, C. A. Harrington, H. D. Prince, $11.95 each (joint award).

Dept. 001, D. C. Herstedt, K. K. Jones, $50.05 each (joint award); 518, K. H. Hiler, $39.60; 574, J. S. Jacobsen, $51.20; 574, G. B. LeClare, $387.80; 027, E. E. Lewis, $16.50; 015, T. L. McCloud, $15; O. H. Miller Jr., $35; 553, H. J. Minch, $230.40; 756, J. Monty, 541, A. Sansone, $9.70 each (joint award); 149, J. P. O'Brien, $15; 833, G. V. Owsley, $29; 140 C. V. Pereira, $342; 401, H. J. Porter, $92.60; 250, J. A. Poystan, $127.90; 059, A. E. Pumala, $90.30; 031, E. H. Roeckel, $67.80 (two awards); 507, P. Rowland, $57.90; 027, A. W. Sandsten, $15; 541, A. Sansone, $162.10 (two awards); 027, C. W. Tabor, $30; 015, L. William, $15; 835, J. L. Williams, $149.10; 831, K. E. Yzelman, $15.

Employe Suggestion awards approved for the week ending April 4.

Dept. 820, T. E. Barker, $17.70; 019, J. R. Becker, B. Wesson Jr., $7.50 each (joint award); 045, H. S. Boyd, $18.10; 141, E. D. Borden, $123.30; 149, L. A. Brugger, $30; 019, D. K. Budge, $15.70; 027, D. L. Clark, $15; 027, R. E. Cloud, $51; 142, G. N. Elgin, $415; 250, M. C. Escareno, $15; 027, P. J. Estrada, $68.10; 059, J. H. Gahagan, $15; 524, C. M. Gilliland, $15; 840, S. E. Gore, $91.90; 143, M. M. Henry, $15; 015, J. Herpick, $15; 001, D. C. Herstedt, $15; 842, M. C. Hight, $431.80; 001, D. E. Howard, $15.

Dept. 142, R. E. Jobe, J. D. Stevens, $110.55 each (joint award); 045, A. W. Jennings, $40; $15, S. S. Jenson, $15; 015, R. V. Leonard, $29.50; 756, J. K. Lindsay, $29.40; 144, W. G. Lux, $128.60; 149, J. C. Marries, $97.60; 101, F. I. Millsap, $15; 031, E. M. Moore, $15; 250, P. Moore, $15; 143, J. J. Murphy, $15; 836, F. Newton, $37.20; 979, R. F. Noe, $15; 027, D. R. Noon, $267.80 (four awards); 420, Y. Okuma, $40.30; 143, J. L. Sanchez, $15; 541, A. Sansone, $15; 250, H. W. Schleibaum, $15; 141, B. Secord, $123.30; 015, N. Valentio, $29; 027, H. M. Zeno, $65.60.

Papers Presented

CONVAIR

ANDERSON — R. T., Dept. 572. "Fundamentals of Ultrasonics." American Society of Nondestructive Testing/Educational Clinic on Ultrasonics, Los Angeles, Calif., March 12.

BONINE—K. C., Dept. 595. "Outline of Computer Graphic Methods Used in Control System Design and Analysis." Society of Automotive Engineers/Aerospace Vehicle Flight Control System Committee Meeting, Orland, Fla., March 12-14.

BOYNTON—F. P., Dept. 596. "Total Emissivity of Hot Water Vapor II. Semi Empirical Charts Deduced from Long-Path Spectral Data." American Institute of Chemical Engineers/New Orleans Meeting, New Orleans, La., March 16.

DE LACY—T. J., R. T. ANDERSON, Dept. 572. "Applications of Nondestructive Testing for Advanced Composites." Air Force Materials Lab/Aerospace Cor., Univ. of Dayton, Conference on NDT of Advanced Composites, Dayton, Ohio, March 18-20.

LYNCH—R. A., Dept. 581. "The Launch Cost Bottleneck." Canaveral Council of Technical Societies/Sixty Space Congress, Cocoa Beach, Fla., March 17-19.

PERUN—K. R., R. T. ANDERSON, Dept. 572. "Nondestructive Testing of Boron Filament Reinforced Metal Composite Material." American Society of Nondestructive Testing Meeting, Los Angeles, Calif., March 10-14.

Papers presented at the AIAA/7th Electric Propulsion Conference, Williamsburg, Va., March 3-5.

ADAMS—J. D. Jr., G. A. HAZELRIGG, Dept. 583. "Mission Analysis for Electrically - Propelled Interplanetary Spacecraft."

LARSON—A. V., Dept. 596. "Measurement of Plasma Flow in MPD Engine."

SHIH—K. T., Dept. 596. "Anode Current and Head Flux Distribution in an MPD Engine."

Papers presented at WESTEC '69, Los Angeles, Calif., March 12.

HERSH—M. S., M. D. WEISINGER, Dept. 572. "Joining of Aluminum Boron Metal Matrix Composites."

WITZELL—W. E., Dept. 572. "Crack Behavior and Toughness of 2218-T81 Aluminum Alloy Parent Metal and Weldments."

Invention Disclosures

CONVAIR

BROCKETT—B. S., Dept. 517. Dohecahedron Island Display.

BROWN—N. J., Dept. 962. Adjustable Tube Clamp.

HEITZMAN—W. A., Dept. 511. Hinge Pin Retainer.

LAWYER—J. M., Dept. 563, D. B. SUGGS, Dept. 513. Boat and Car Transporter.

WITZELL—W. E., Dept. 572. Cryostat Having Means for Viewing the Specimen Under Test.

Personals

CONVAIR

Gratefully acknowledging and thanking you for your kind expression of sympathy upon the death of my husband, Erwin Prewitt, Dept. 130.

Edna Prewitt

* * *

I wish to express my deep and sincere appreciation for the kind expressions of sympathy received from Convair friends after the loss of my beloved husband, Daniel Whorton, Dept. 031.

Mrs. Mary Whorton

Retirements

CONVAIR

BJORNSON—Martha E., Dept. 780-5. Seniority date July 6, 1950, retired March 31.

CLARK—Gilbert D., Dept. 105-0. Seniority date July 25, 1938, retired March 28.

CRUZAN—John S., Dept. 958-7. Seniority date Sept. 21, 1956, retired March 24.

DARR—Francys A., Dept. 843-0. Seniority date Oct. 21, 1960, retired Jan. 24.

GILBERT—Ernest A., Dept. 130-1. Seniority date March 17, 1957, retired March 28.

GONTHIER—Rosario E., Dept. 780-3. Seniority date Jan. 19, 1956, retired March 29.

HACKER—Florian, Dept. 401-0. Seniority date Sept. 16, 1940, retired March 28.

HART—Frances B. Seniority date Dec. 3, 1956, retired Dec. 9, 1968.

HITCHCOCK—Frederick E., Dept. 002-0. Seniority date Oct. 19, 1948, retired March 28.

MORTENSEN—Milton R., Dept. 979-1. Seniority date June 11, 1956, retired March 28.

SWAREZ—Gilbert F., Dept. 250-5. Seniority date May 7, 1957, retired March 31.

VILARDI—Blanche C., Dept. 015-0. Seniority date Oct. 23, 1950, retired March 31.

Rider-Driver

CONVAIR

RIDE WANTED—From 74th & University, La Mesa, to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Phone J. Keais, ext. 1488 LF or (home) 469-5781.

RIDE WANTED—From Diane shopping center, Clairemont, to Lindbergh Field plant, 7 a.m. starting time. Call Bill Simmons, ext. 2415 LF or (home) 278-0764.

RIDE OFFERED—From Lakeside, Bostonia or El Cajon areas to Lindbergh Field plant, 3:30 p.m. to midnight shift. Phone C. Foss, ext. 552 or (home) 443-3592.

RIDE WANTED — From Bisby Lake Ave., Lake Murray area, to Lindbergh Field plant, 7 a.m.-3:30 p.m. shift. Call Shirley Tinnon, ext. 1665 LF or (home) 466-5548.

Deaths

CONVAIR

ALLEN—George C., (retired Feb. 20, 1959), died March 8. Survived by a sister Hazel Davies.

GUMTZ—Ralph E., Dept. 403-1. Died March 30; survived by his wife, Mae L., son, Michael and daughter, Susan.

PALIS—Walter A., (retired June 4, 1960), died April 2; survivors includes a neice, Doris Kimball.

PREWITT—Charles E., Dept. 130-1. Died March 26; survived by his wife, Edna, daughters Mrs. Althea Channell, Mrs. Helen Talnadge and Mrs. Sue Bunkley, 3 grandchildren, a sister and a brother.

SANCHEZ—Jose J., (retired Aug. 9, 1968); survived by his wife, Anna.

THOMPSON—Guy I. (retired Aug. 25, 1961), died March 29. Survived by his wife, Lena Belle.

Math Contest Set For May 3 at State

The 11th annual mathematics contest sponsored by Convair and San Diego State College will be at 1 p.m. May 3, at the West Commons, San Diego State.

There will be three divisions represented: San Diego city schools; San Diego County schools; San Diego city and county independent schools. The contest is open to students enrolled in honors math courses or their equivalent.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

New Cryogenic Tank System Ups Capacity

Convair has developed a new cryogenic tankage system which will increase the residency capability of future space missions through improved insulation and construction.

The system, part of an advanced space systems package for military and NASA missions, is designed to help Convair "lead the field in new applications and uses for cryogenic upper stage systems," according to William A. Roberts, project engineer.

One of the problems in space missions has been the short storage time of cryogenic fuels, liquid oxygen and liquid hydrogen. The new system, composed of a tank with a capacity of more than 1,000 gallons and a thermal conditioning system, will undergo ground hold and simulated space thermal conditioning testing.

Data from the tests hopefully will provide a technology base to support several Air Force projects now under way as well as extend the flexibility of space missions in general.

The tankage system was developed in the launch vehicle programs preliminary design section with Ross Ringwald as principal investigator.

According to Ringwald, the tank section of the system is fabricated from aluminum plate using a hot spin forming process. The method usually used to construct ellipsoidal tanks is to weld several gore sections together into a dome and then weld the two domes together.

In the spin-form process, a single plate of aluminum is hot spun into the desired elliptic dome shape and then the two domes are welded together. The advantages are a lighter, stronger and less expensive tank.

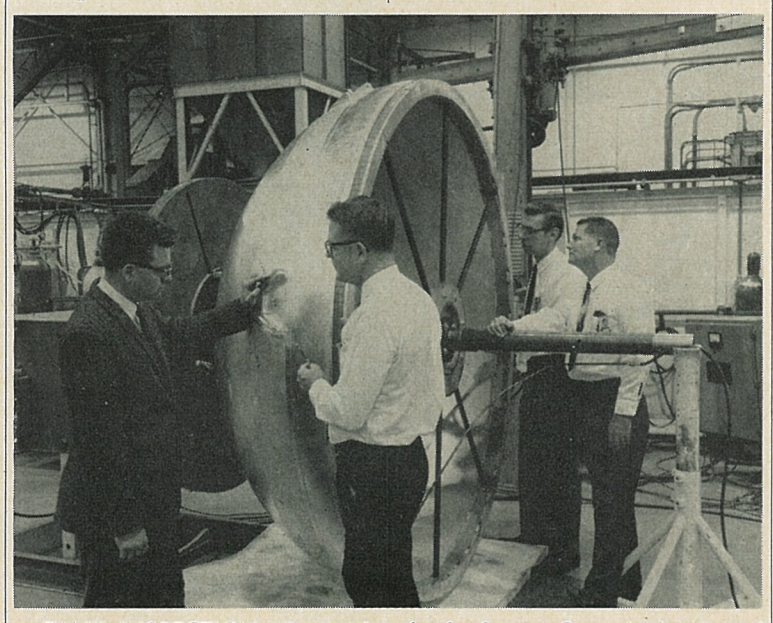
After the tank undergoes a series of acceptance tests, the remaining task is to install the thermal conditioning system prior to conducting the ground hold and space environment tests.

The thermal conditioning system consists of blankets of super-insulation, fiberglass carrier shields and tank support struts, and an outer shroud. Super-insulation is a series of aluminized mylar radiation shields separated with dacron tufts.

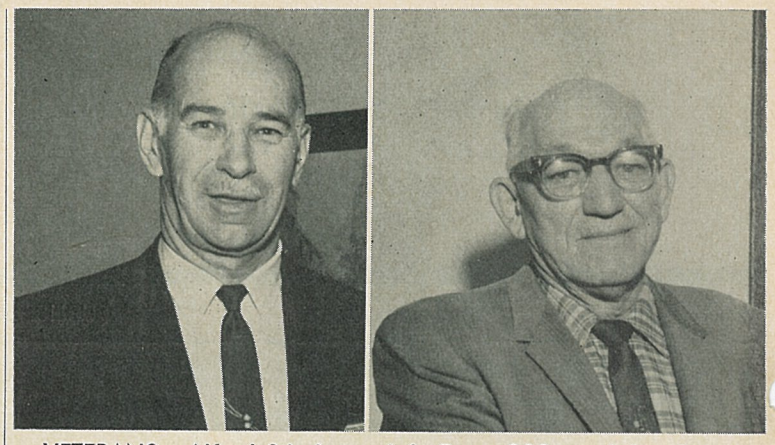
In charge of the thermal conditioning, encapsulation and testing of the system is Karl Leonhard of Dept. 584-0.

Responsible for manufacturing the basic tank was Bob Bruce, Dept. 403-3, while Ron Comber, Dept. 403-3, is in charge of manufacturing the encapsulation and thermal conditioning systems.

Tool design was done by Tom Hughes, Dept. 420, and tool manufacturing under the direction of John Pasich, Dept. 451. Frank Bench of Dept. 491 was welding engineer. The tank was assembled in Dept. 756.



TANK INSPECTION—Inspecting half of new Convair-developed cryogenic tank system just prior to putting the second bulkhead in place are Frank Bench, Dept. 491, welding engineer; Bob Bruce, Dept. 403, production engineer; Ross Ringwald, Dept. 962-8, principal investigator; Ron Comber, Dept. 403, manufacturing engineer.



VETERANS—Alfred Stieringer, left, Dept. 002 special assignment man, and N. L. Wire, Dept. 759-0 metal fitter, recently received 35-year anniversary pins from Jack L. Bowers, Convair general manager. Both came to work for company at Buffalo, N.Y. plant in 1932, and have remained with only a two-year break for Wire and one-year for Stieringer in 1930s. Stieringer's father was also Convair employe.

Craftsmanship Goals Exceeded by 25 Depts.

(Continued from Page 1)

Dept. 732 — sheet metal, KM; reduced defects to 8.1 per 1,000 manhours; goal of 8.4 exceeded by 3.6 per cent.

Dept. 733 — processing and tubing, KM; reduced defects to 9.2 per 1,000 manhours; goal of 18.5 exceeded by 50.3 per cent.

Dept. 759 — tank assembly and welding, Plant 19; reduced defects to 3 per 1,000 manhours; goal of 3.1 exceeded by 3 per cent.

Dept. 761 — Atlas-Centaur final assembly, KM; reduced defects to 12.1 per 1,000 manhours; goal of 19.7 exceeded by 38.6 per cent.

Dept. 780-2 — electronic development, KM; reduced defects to 4.1 per 1,000 manhours; goal of 13 exceeded by 68.5 per cent.

Dept. 780-3 — test equipment manufacturing, KM; reduced defects to 4.4 per 1,000 manhours; goal of 6 exceeded by 26.7 per cent.

Dept. 780-5 — harness manufacturing, KM; reduced defects to 7.8 per 1,000 manhours; goal of 19.9 exceeded by 60.8 per cent.

Dept. 780-6—aerospace ground equipment, KM; reduced defects to 15.4 per 1,000 manhours; goal of 20.5 exceeded by 24.9 per cent.

Dept. 833-2 — shipping, staging, traffic, LF; reduced defects to 9.2 per 1,000 manhours; goal of 11.5 exceeded by 20 per cent.

Dept. 836 — first cut, LF; reduced defects to 3.4 per 1,000 manhours; goal of 8.2 exceeded by 59 per cent.

Dept. 840 — procurement document review, LF; achieved goal of reducing rejections to 2 per cent.

Dept. 979 — ETR operations; achieved goal of reducing defects to .27 per 1,000 manhours.

Dept. 985 — VAFB operations; reduced defects to .26 per 1,000 manhours; goal of .42 exceeded by 38.1 per cent.

New Labor Pact Signed With IAM

(Continued from Page 1)

certain high cost elective dental treatment such as inlays, gold fillings and crowns, will be 50 per cent and there are some limitations and exclusions including orthodontic treatment.

Retirement benefits were increased from a scale of $4.25 to $5.75 per month for each year of accredited service to a range of $4.50 to $6.50 per month per year. The requirement of being age 40 for full vesting has been eliminated. The 85 point retirement plan, scheduled to go into effect Jan. 1, 1970, under the old contract, was retained.

Other improvements include an increase in second shift premium from 12 to 18 cents and changes in the per diem allowance so that the rate of $14 will be paid for the first 89 days rather than decrease after 31 days as in the old contract. Also, the non-lodging per diem allowance is increased by $1.00.

The improvements in the Savings and Stock Investment Plan and tenth holiday, provided for in the previous contract and yet to be implemented, will be effective on the same dates contained in the previous contract.

In-Plant Course Has 51 Students

Fifty-one Convair employes have enrolled in two sections of a United States International University (USIU) course in "Aggregative Economics" at the Kearny Mesa plant.

The course is one of nine required for the USIU Master of Science in Management Science advanced degree.

One section is being taught from 4 to 6:30 p.m. Thursdays and Fridays by Dr. Theodore Kreps of the Stanford University Graduate School of Business. The other is being taught from 5 to 7:30 Mondays and Wednesdays by Dr. Mark Nelson, USIU assistant professor of business administration.

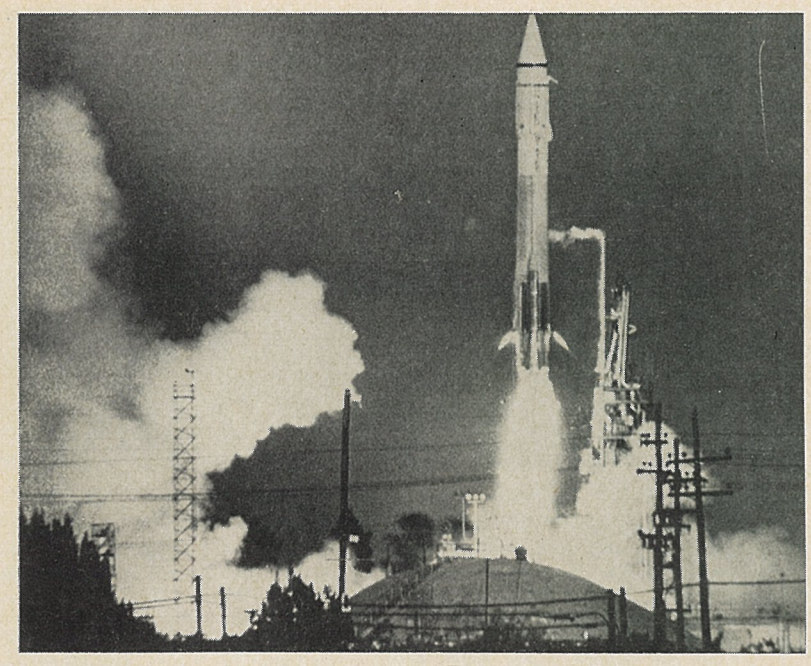
Several of the 51 students also are enrolled in other evening courses in the MSMS program at USIU's Elliott campus. "Digital Computer Applications," one of the on-campus courses, is taught by D. R. Pardee, Convair manager of management systems.

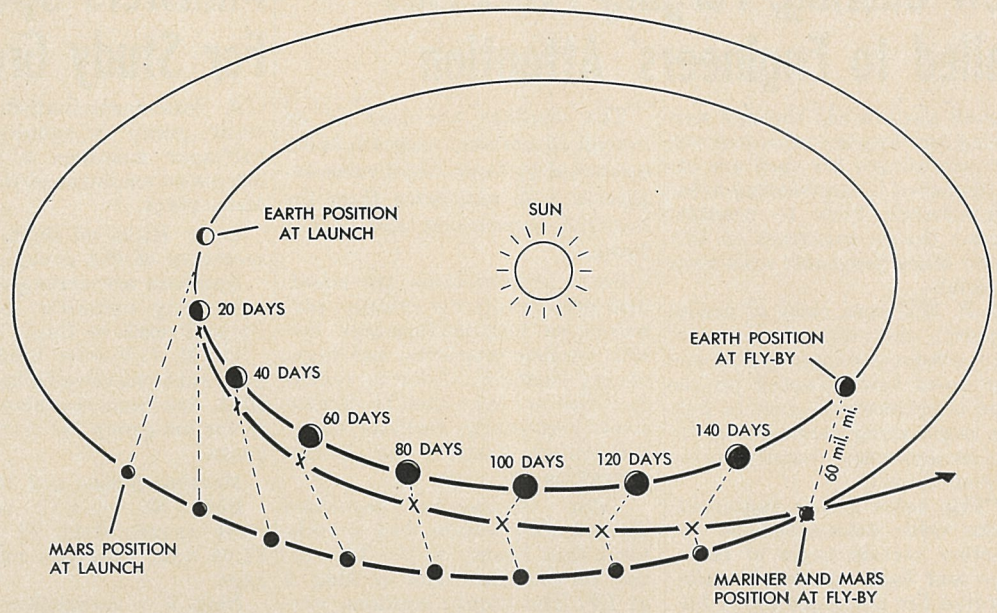
Dr. Ravenis to Chair Research Chapter

Electronics-SD's Dr. J. V. Ravenis has accepted chairmanship of the newly formed San Diego section of Operations Research Society of America (OSRA).

OSRA members, associate members or students are eligible to join the local section. Interested parties may contact Dr. Ravenis at ext. 1796.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.





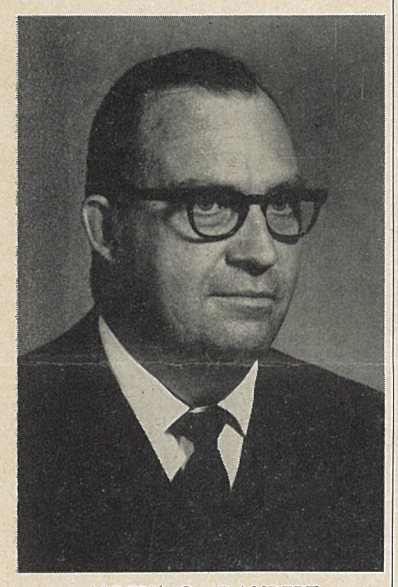
UP, UP AND AWAY—Steam, smoke and a gleaming Atlas streak skyward as 45th successful flight of an SLV-3 sends Mariner 7 toward rendezvous with planet Mars on Aug. 4. March 27 shot from ETR was second successful Mariner shot this year. Mariner 6 is scheduled to fly by Mars on July 31.

General Manager Named For Electronics Division

Albert G. Daubert has been appointed general manager of the Electronics division of General Dynamics, Roger Lewis, Corporate president, announced.

The position had been vacant since the death of Herman H. Hanink in December, 1968.

Daubert joined General Dynamics after 18 years of man-



ALBERT G. DAUBERT

agerial experience with RCA. Most recently he was manager of product assurance for information systems. His responsibilities included international program management, project management for major installations and specialized systems projects.

From 1963 to 1965 he was manager of communication systems for data processing. Earlier he was manager of RCA's work on the military's AUTODIN (Automatic Digital Network) program, a worldwide communications switching system.

The Electronics division is a major supplier of communication, undersea warfare, navigation, data handling, radar, telemetry and instrumentation systems to the armed forces and the National Aeronautics and Space Administration. Its headquarters are in Rochester, N. Y., and it has major operations at Orlando, Fla., San Diego, Calif., and Avenel, N. J.

Daubert, 47, earned a BS degree in electrical engineering from Drexel Institute of Technology and has done graduate work at Temple University.

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A new reporting alignment was announced by Roger Lewis, president of General Dynamics, following resignation of John J. Graham, former Corporate group vice president-electronics.

Albert G. Daubert, newly appointed manager of the Electronics division, reports to Algie A. Hendrix, Corporate vice president.

Dause L. Bibby, president of Stromberg-Carlson, and Carl V. Shannon, president of Stromberg DatagraphiX, report to John A. Sargent, Corporate vice president-finance.



COMMANDANT'S VISIT—Admiral Willard J. Smith, U.S. Coast Guard commandant, discusses Convair's ocean data systems programs with W. T. Dorrance, left, director of special programs, and J. W. Petre, chief requirements engineer for Convair marine systems.

Commandant of Coast Guard Pays Visit To Convair, Inspects Ocean Data Station

Adm. Willard J. Smith, commandant of the U.S. Coast Guard, and RAdm. Charles Tighe, commander of the 11th Coast Guard District with headquarters in Long Beach, got a first-hand look at one of Convair's ocean data stations during a brief visit to the Lindbergh Field plant March 20.

Among Convair personnel serving as escorts and briefing the two on ocean data station operations were W. T. Dorrance, director of special programs, J. W. Petre, chief requirements engineer for marine systems, and Robert Devereux, ocean data systems program manager.

Mariner 6 and 7 Both Racing to Mars Flyby

Atlas-Centaur 19 successfully launched the year's second Mars probe March 27.

It was the 45th consecutive successful Atlas SLV launch.

The space craft, Mariner 7, is due to arrive above the south polar cap of Mars on Aug. 4 five days after the flyby of Mariner 6, which was launched Feb. 24.

The mission objective of both probes is to study the surface and atmosphere of Mars to establish a basis for future experiments in the search for extra terrestrial life.

The launch occurred just after 2:22 p.m. PST March 27 from Pad 36A at Cape Kennedy.

The Atlas and Centaur stages powered the first 9.22 minutes of the flight. Spacecraft separation occurred at 2:35 p.m. PST.

Convair officials at Cape Kennedy for the launch included Andrew Kalitinsky, launch vehicle programs engineering director; Deane Davis, Centaur program manager; Dick Keehn, Atlas Program manager; Walt Hicks, AC-19 program office engineer; A. B. Yanke, flight test group engineer; B. R. Foushee, chief of Centaur systems engineering.

Daniel Sarokon was launch conductor with D. J. Merritt assistant for guidance and control, J. L. Johnson for instrumentation, J. M. Sylvester for electrical systems, and J. M. Kechele for mechanical systems.

Pickering Praises Accuracy of Launch

Dr. William Pickering, director of the Jet Propulsion Laboratory, expressed extreme satisfaction with the accuracy of the AC-19 Mariner 7 launch, even more precise than that of AC-20's launch of Mariner 6.

Robert Benzwi of the Centaur program office, a guest of JPL at its space flight operations center in Pasadena, Calif. during the launch, reported that Dr. Pickering pointed out this is the first time two U.S. space craft were en route to another planet at the same time.

Really Wild

Field Rep's Expense Report Reflects Perils of Saigon Life

All who have struggled with a travel report will sympathize with the plight of R. L. Harriman, field representative of Pomona engineering department's Systems Support and Logistics, following a recent trip to Saigon.

"This is a wild travel report, so I thought I had better give a few explanations," Harriman said in a note attached to the normal report form.

"There are a lot of taxi fares on this expense report because it is impossible to get transportation at Tan Son Nhut (Saigon) except in civilian taxis which charge 50 cents for each trip regardless of distance on the base. The hotel is down in the middle of Saigon and one out of four of the taxi drivers are Viet Cong, by official estimate.

"I stayed in a hotel in Saigon for three nights but I failed to get a receipted bill. While I was checking out some idiot started shooting up the street outside and everybody hit the deck. As soon as the smoke cleared away I got out of there, but I forgot about getting the bill until it was too late to go back.

"Actually Saigon was reasonably quiet, with only sporadic outbursts in the suburbs. The general atmosphere is very depressing because of all the precautions taken against Viet Cong terrorism. All of the hotels and shops have heavy wide screening (like cages) across the front of the lower floors to stop fire bombs and grenades. Most of the hotels have sandbagged machine gun emplacements right in front of the main entrance. These are manned 24 hours a day. There is barbed wire everywhere and at night when the curfew is on, accordian barbed wire is pulled across all of the critical access roads.

"Normally, it is safe to travel in downtown Saigon during the daylight hours. The Viet Cong usually won't risk exposing themselves unless they can nail a fairly large group concentrated in one spot. All in all, you spend a lot of time looking over your shoulder and avoiding crowds.

"I carried a slide projector and tape recorder along to make presentations. They got kicked around quite a bit on the trip, so I picked up a small case to carry them in for protection and ease of transportation. It is the $8 in Item L of the report on 3/15. I couldn't get a receipt because I bought it in a small Vietnamese shop where they couldn't speak English and probably didn't have any sales slip forms even if I could have made them understand that I wanted one."

Needless to say, Pomona's understanding travel office was happy to honor the travel report without receipts under these quite unusual circumstances.



TIMELY TIP—Sandy Anderson, publications aide in Convair's Dept. 524-2, points out clocks must be moved ahead an hour as daylight saving time begins at 2 a.m., April 27. You'll get "lost hour" back Oct. 26.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

JAMES H. MASON (1950) from General Dynamics Los Angeles office to Convair division as director of communication; **DON CARLSON** (1959) from Electronics division (Electro Dynamic) to manager of employe compensation, Electric Boat; **GLEN C. EGGEN** (1949) from Convair to Pomona as senior reliability engineer; **DANIEL L. BUELL** (1968) from Convair to Electronics, San Diego as manufacturing development engineer; **JOHN C. PERRY** (1966) from Quincy to supervisor, nuclear testing, Electric Boat; **MANUEL PIMENTAL** (1951) from Quincy to foreman, Electric Boat; **EARL E. GOODWIN** (1963) from Electric Boat to quality group engineer, Fort Worth; **RICHARD K. BYERS** (1959) from Convair to project planning coordinator, Stromberg-Carlson; **ALAN A. GENOSI** (1966) from Electric Boat to Quincy as advanced project engineer; **NORMAN H. BREED** (1956) from Quincy to foreman, Electric Boat; **JUSTIN R. BARTON** (1969) from Corporate Headquarters to Pomona as senior budget analyst; **DONALD L. STEWART** (1966) from Convair to Flextrack-Nodwell, Ltd.; **DONALD A. ALEXANDER** from Electronics, Rochester to Corporate Headquarters; **ROBERT J. BUTERA** (1963) from Electric Boat to senior design engineer, Quincy; **ERNEST C. WALLEY** (1961) from Convair to Canadair, Ltd.; **GEORGE P. DELP** (1960) from Convair to Electronics, Rochester; **WILLIAM D. KRAMER** (1965) from Quincy to senior wage and salary analyst, Electric Boat.

ENGINEERING
partner in rebuilding urban america

New Casting, Forging Processes Called to Engineers' Attention

Small parts made through new casting and forging processes and cost information for each are being displayed in engineering areas at Lindbergh Field to acquaint Convair design engineers on DC-10 and other programs with their potential.

H. P. Williams, chief of design support, said the displays of small vendor-produced parts and their costs were created by the value engineering section to help keep engineering personnel up-to-date on aerospace manufacturing state-of-the-art.

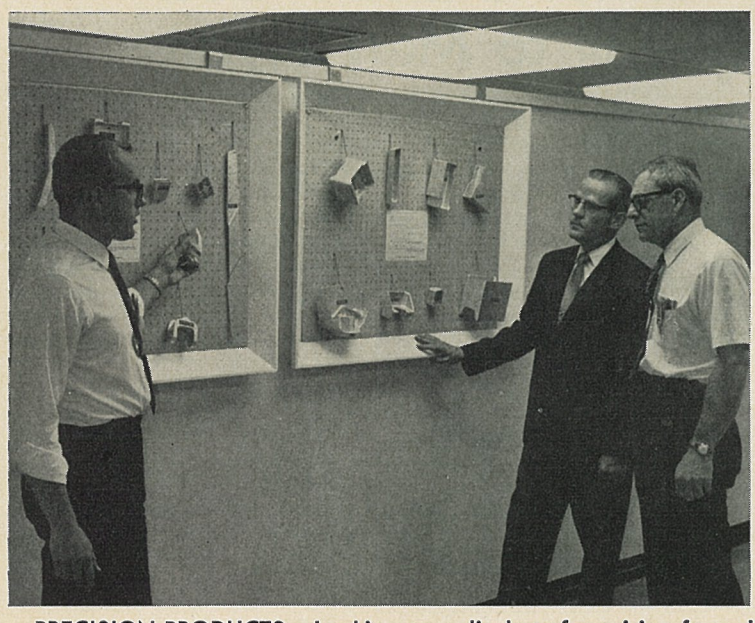
"This helps design engineers make value determinations on whether certain types of castings and forgings can be substituted for machined parts for cost savings or to improve product quality," he said.

"The processes shown may be applicable to future as well as present design activities."

The displays are part of an overall educational program being conducted by Dept. 561-0 value engineers with assistance from the material department and vendor firms.

Short presentations are scheduled periodically for selected personnel on high-performance metals, casting processes, and high-energy forming. Visits to vendor facilities are scheduled to demonstrate high-energy forming, chemical milling, casting, and electrodeposition processes.

Value engineering personnel also recently established a technical data library in the VE section on the third floor of Bldg. 5 at LF. The library contains vendor information on adhesives, surface finishes, castings, welding, electrical and electronics components, fastenings, extrusions, and chemical milling.



PRECISION PRODUCTS—Looking over display of precision-forged aluminum alloy vendor parts, one of several displays created by value engineering section, are, from left, Tom Boyer, Dept. 561-0 value engineer; Sam Dickerson, Dept. 160 structural design engineer; Sam Merkowitz, Dept. 532-0 design specialist.

El Monte, Calif. Vendor First To Receive Incentive Award

Prime Engineering of El Monte, Calif., a Convair subcontractor, has received a Value Engineering Incentive award totaling $773.16 for a cost reduction idea which will save ten times that amount over a six-month period. A second award is expected which will cover the second six months.

The bonus represents the first such award ever made to a Convair vendor.

Floyd Copher, Prime Engineering president, accepting the check for his company, said, "The money will be used to help finance added facilities within our company."

The vendor's idea involves a production savings on an air intake duct fitting for the F-111.

The El Monte company devised a means of cutting two of the duct parts from the same piece of metal which had previously yielded one. This was accomplished through special overlays, a layout repositioning and an intricate means of cutting.



UNPRECEDENTED AWARD—Prime Engineering, Convair DC-10 subcontractor, accepts first Value Engineering Incentive bonus, $773.16, given to vendor. Attending, from left: Al Hermann, Convair senior buyer, subcontracts; Lyle A. Wood, Convair outside production manager; Floyd Copher, Prime Engineering president; Wade Byrn, general manager of El Monte, Calif. company.

Convair Son Heads SDS Student Body

Ron Breen, son of L. J. (Len) Breen, Dept. 130-8, has been elected Associated Students president of San Diego State College.

The 19-year-old sophomore is believed to be the youngest AS president in the state college system. His father is Convair's industrial hygienist and radiation control officer and acts as safety engineer for the Kearny Mesa plant.

Ministers Speak For Study Group

A non-denominational Bible study group is sponsoring five half-hour meetings a week for interested employes at the Kearny Mesa plant.

Betty Hicks of Dept. 130-6, is secretary of the group.

Speakers are arranged through a steering committee headed by Floyd French of Dept. 761-0.

Dr. H. J. Vander Linden, a 78-year-old semi-retired Baptist minister, has been speaking regularly for the group for more than 11 years.

Meeting places and times are:

Bldg. 33 — OV1 conference room (south end), 11 a.m. and 11:45 a.m. Tuesdays and Thursdays.

Bldg. 5 — mezzanine Col. H 1-11, 11:30 a.m. Tuesdays.

Bldg. 1 — second floor conference room, 11:30 a.m. and 12:15 p.m. Tuesdays and Thursdays.

Additional information can be obtained by phoning Betty Hicks, ext. 3753 KM.

Standard ARM Facility Shown

Pomona division's Standard ARM facility at Convair's Lindbergh Field plant was visited recently by John B. Jackson, general manager of IBM Corp's. Oswego, N. Y. installations.

A subcontractor for Pomona's Standard ARM project, IBM is producing the missile's Target Identification and Acquisition System (TIAS).

Jackson and an assistant, Edward Zaucha toured Lindbergh Field facilities which are handling research and development and production of a missile launch adaptor. Jackson also met with Jack Bowers, Convair general manager.

Pomona's Standard ARM aircraft modification center has been located at Lindbergh Field since July 1968.

Craftsmanship Win Earns A "Well Done"

Convair division is continuing to receive congratulatory messages on its receipt of the U. S. Air Force Craftsmanship Award, highest recognition given by the Air Force Systems Command in its Zero Defects program.

O. A. Cocca, Air Force Logistics Command Zero Defects program manager, in a recent letter to W. E. Magnuson, Convair Craftsmanship program chairman, said:

"We were extremely delighted that the award was made to your firm. I know that you have been aggressively working to this end for some time, and feel that it was no doubt a great personal triumph as well as a significant achievement for the Convair organization.

"The criteria for this award are extremely challenging, and it represents a prized and coveted honor—one that will be shared equally by all employes of Convair . . ."

Ex-Convair Employe Receives Air Medal

Sp4 Jimmy D. Cavender, a former Convair employe on leave of absence for Army service, has been awarded the Air Medal for action in Viet Nam with the 173rd Airborne Brigade.

A machine gunner, Cavender formerly worked as a Convair dispatcher at Vandenberg AFB and is the son of E. A. Cavender, a welder in Convair's Dept. 401-5.

Blueprint Reading Class Set at LF

An eight-week blueprint reading class for second-shift Convair division employes at Lindbergh Field will be held from 1 to 3:30 p.m. Tuesdays beginning April 22 in Bldg. 14, Rm. 6. Jim Wilkins of educational services Dept. 130-3 will be instructor.



SUPPLIER HONORS—Zero Defects awards were presented recently to representatives of six Electronics-SD supplier firms. Holding award plaques (clockwise from left) are H. G. Krogstad, Angstrom Precision; Ron Zimmerman, Amphenol RF Division; William Beanland, Janco Corp.; Joseph Davis, Sterling Instruments; R. M. McKey, Perfecto Cast. Grant Dugger, Electronics-SD buyer, is seated at center. Others, from left, are Lt. (jg) Warren James, DCAS; R. V. Greno, DCAS; Les O'Neal, purchasing; F. S. Acomb, purchasing; Hal George, DCAS; Robert Glove, Janco Corp.; Bill Kinney, purchasing; D. C. Prim, general manager; R. H. Nicholson, manager of quality control.

Electronics-SD Honors Six Firms For Products Free of Defects

Electronics - SD recently presented Zero Defects Awards to six supplier firms for outstanding defect-free work. This brought to 16 the number of suppliers so honored in three presentations at six-month intervals.

Recipients of the award plaques and products supplied were:

Angstrohm Precision Inc., Van Nuys, precision capacitors; Amphenol RF Division, Danbury, Conn., microwave hardware; Fafnir Bearing Co., New Britain, Conn., precision bearings, Janco Corp., Burbank, military-specification switches; Sterling Instrument Co., Mineola, N.Y., gears, brakes and clutches; Perfecto Cast, San Diego, castings.

Introductions and opening remarks were made at the presentation ceremony by R. H. Nicholson, manager of quality control.

D. C. Prim, Electronics-SD general manager, congratulated the suppliers and stressed importance of Zero Defects in supplier materials as well as in the end product.

Lt. (jg) Warren James, chief of the engineering branch, Defense Contract Administration Services, San Diego, also offered congratulations.

Meeting of delivery schedules and volume and complexity of products delivered also were considered in selection of the award winners.

Representatives of the winning firms were guests of Electronics-SD for luncheon at Kings Inn following the awards presentations.



STANDARD ARM VISITOR—John B. Jackson, IBM Corp's. Oswego, N.Y. facility general manager, views A-6 Intruder mounted Standard ARM missile with Sam Glibert, resident manager of Pomona's Standard ARM facility at Convair's Lindbergh Field plant as IBM's Edward Zaucha looks on.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Convair has developed considerable capability for the design and manufacture of aerospace ground equipment on the F-111. Are we planning to exploit this capacity for F-14, F-15, or AMSA business?

A—Yes. We've made marketing contacts with all potential customers on those programs and others. We'll continue to follow the business possibility closely.

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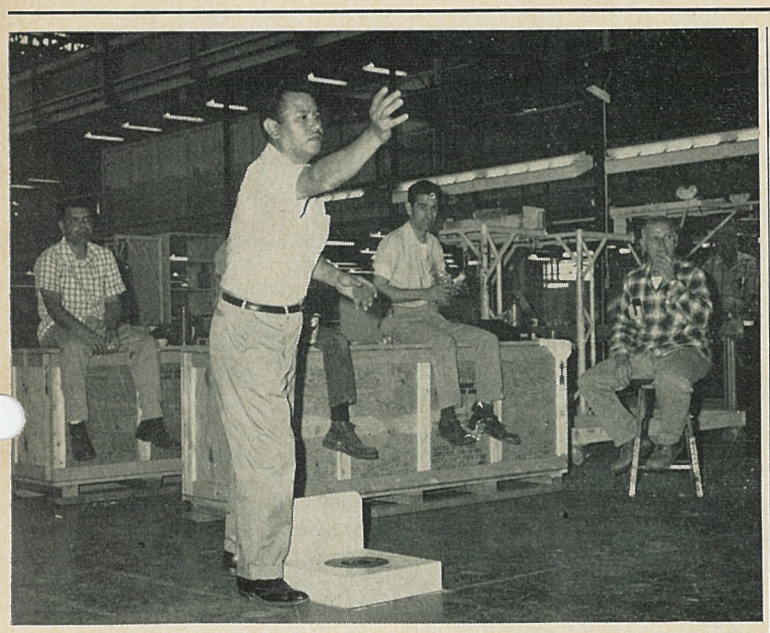
Q—People traveling south on the new stretch of Highway 5 past Plant 19 can see our sign during the day but not at night. Why not install some lights?

A—Good idea. We've obtained approval from the Air Force and the lights will be installed shortly.

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Q—Last year all employes got copies of the General Dynamics Annual Report. Those of us who don't own stock really appreciated the thought. Will we get them this year?

A—Yes. The reports will be distributed later this month.



TOURNAMENT TOSS—Convair painter Edward Ruiz, Dept. 027, pitches the winning point in AF Plant 19's recent "Washer Pitch" tournament. Ruiz beat 22 others in singles competition. His final game score, 21-15.

Ruiz 'Washer Pitch' Champ at Plant 19

Edward J. Ruiz, painter in Dept. 027, this month tossed his way to victory in AF Plant 19's "Washer Pitch" tournament with a score of 21-15 over runner-up Carlo Constantino, Dept. 020.

Doubles tourney winners were W. L. Worthington and E. F. Arnaud in the noontime in-plant contests.

Ruiz, a South Bay Little League coach, bested a field of 22 players in elimination contests while Worthington and Arnaud beat ten doubles teams.

Organizer of the tourney, Ralph East, Dept. 027, said he plans more in the future.

Convair 'Birdman' Wins National Title

Two members of the CRA Badminton Club — John Leib of Convair's Dept. 509-0 and Bill Johnstone of Convair's Dept. 587-0 — competed in the three-day U. S. National Open Badminton Championships early this month in Louisiana.

Leib won the senior men's division title in a 1½-hour match, longest in the tournament. He was the only United States player to win a finals title.

Johnstone reached the quarter-finals in the senior men's singles division. World champions from Denmark, Malaya and Indonesia were among the 150 tournament players.

Reservations Open For Caribbean Tour

A few openings remain for employes and family members for a 16-day CRA-sponsored "Caribbean Carousel" tour leaving July 19.

The tour group will visit San Juan, Puerto Rico, and Kingston, Jamaica, take a three-day cruise to Nassau in the Bahamas, and spend one day at the Fontainbleau Hotel in Miami.

Interested employes should phone Del Dimmitt, ext. 511 LF, for additional information or to make reservations.

Cost of $695 per person includes air fare, hotel accommodations, and some meals.

Rush (K6QXN) Elected Ham Club President

CRA radio club elected L. D. Rush (K6QXN), president; Paul Crawford (WA6FXN), vice-president; Francis Schneider (WB6BOP), secretary-treasurer recently. Bill Roden, (WB6JWQ) will be responsible for the operation of club equipment as station engineer.

The club plans to establish a communications network for the Borrego Rough 100-mile race April 19-20. Anyone wishing to assist in manning checkpoints should contact Joe Miller, ext. 2728 KM.

Club Schedules 20th Rose Show

Convair Garden Club will have its 20th anniversary spring rose show Saturday and Sunday (April 19 and 20) at the Floral Building in Balboa Park.

The show has been listed as an event in San Diego's 200th anniversary celebration.

Entries will be open to all Convair employes and their families and will be taken from 7 a.m. to 11 a.m. Saturday, Judging will be from 11 a.m. to 2 p.m. The show will be open from 2 p.m. to 9 p.m. Saturday and from 10 a.m. to 6 p.m. Sunday. Admission is free.

The show will have five divisions. The first will be roses with three sections, hybrid tea, grandiflora and floribunda. Division two is arrangements; division three, corsages; division four, children's classes; division five, best of show.

Show entry lists may be picked up at CRA outlets.

Sq. Dancers Planning 16th Joint Meeting

CRA Dynamic Eights square dancers will travel to Pomona as guests of Convariety Steppers (PRA square dancers) April 19 marking the 16th consecutive year that the two clubs have held joint dances.

Coincidentally the Steppers are celebrating their 16th anniversary this year.

Dancing is slated to begin at 8 p.m. following a dinner in PRA clubhouse. Ronnie Cupp of West Covina, Calif. will be caller.

On alternate years the Pomona club journeys to San Diego for the annual get-together.

Tennis Club Plans Beginners Classes

A 10-week tennis class for beginners will be offered by the CRA tennis club starting at 10 a.m. Saturday, April 26, at the CRA courts at Kearny Mesa.

Classes will be open to all General Dynamics employes and their families and will be limited to 16 players. A fee of $3 will be charged to provide balls for the classes and trophies for a tournament.

Those interested may enroll by calling Inez Schurr, ext. 1111.

Flyers' Training Draws 80 Students

More than 80 people have signed up for the Bonair Flyers private pilot ground school course. Red Taylor of the Flyers termed the response to the school "fantastic."

Taylor said the club had gone as far north as Seattle and as far east as Tucson to get supplies for the class. They have already moved from one of the small CRA clubrooms into the picnic shelter to accommodate the large group.

Adventure Group To Visit Mines

CRA Adventurers plan a camping and field trip this weekend (April 19-20) to the Rand mining district in the El Paso Mountain area, 193 miles north of San Diego and northwest of the town of Red Mountain.

After driving north on U. S. Highway 395, the group will rendezvous at 9 a.m. Saturday at the Randsburg Post Office and form an auto caravan to the camp location.

Sites to be explored in the area include Burro Schmidt's tunnel, museum and camp; old gold mines; an abandoned Old Dutch Cleanser seismotite mine; ruins of a movie set; one of the few active tungsten mines in the U. S.

The Adventurers' regular club meeting will be at 7:30 p.m. today (April 16) in the CRA Clubhouse auditorium at Kearny Mesa.

Phil del Campo, an authority on local history and speaker for San Diego's 200th Anniversary committee, will discuss early San Diego County history, pre-Spanish inhabitants and explorers, and Indian tribes and the impact of early settlers on their way of life.

Jarletts Win Mixed Doubles

Winners in the CRA spring tennis tournament will be honored at an awards presentation at 7:30 p.m. Thursday, April 17, at CRA clubhouse.

In the doubles matches played at Mesa College, Amy and Frank Jarlett won a 32 game round robin with a score of 25 to edge out Mike and Diana Griggs, 20 game winners, for the mixed doubles title.

The mens doubles was won by Bert Mawhinney and Bill Conner who took 37 out of a possible 48 games in a round robin.

In the intermediate men's singles, Mike Griggs came back after losing the first set 9-7 to beat Dave Gorham 6-2, 6-3 for the title.

Amy Jarlett won the women's intermediate singles by defeating Hilda Sealey, 6-2 and 6-3.

Volleyball League Teams Are Forming

Convair, Electronics-SD and Stromberg DatagraphiX will have their own intramural volleyball league this season, starting this week.

Teams may be registered with Pete Beyrer, ext. 1111 KM. There will be individual trophies and an award dinner for the winning team. Workouts can be scheduled at the Federal Building, Balboa Park from 7 to 10 p.m. Wednesdays.

Don O'Brien Wins Among 'Masters'

CRA Pistol Club shooters Don O'Brien, Bill Dittmann and Roland Schneider took top honors in Masters, Expert and .45 Cal. Short National matches March 23 at police range.

Results: Masters—O'Brien 291-7x, Schneider 287-8x; Expert — Dittmann 281-10x, Charlie Kropp 277-3x; .45 Cal. Short National—Schneider 280, O'Brien 261, Kropp, 255, Warren Walker 244.

Rockhounds Plan Geode Gathering

CRA Rockhounds will gather geodes on a field and camping trip this weekend (April 19-20) at Gold Rock Ranch in Ogilby, Calif.

Members will meet at the ranch at 8 a.m. Saturday, will camp in a designated area, and will leave for the geode collection site at 8 a.m. Sunday.

Phone John Clancy, trip leader, 463-8010 after 5 p.m., for additional information.



EASTER BUNNY—Showing off one of Convair Wives Club Easter bunnies are, from left, Mrs. June Crosby, newspaper columnist and guest speaker at March 26 wives luncheon; Mrs. Arnold Ramberg, hostess of day; Mrs. Paul Brock, club president; Mrs. John McIntyre, potluck chairman.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is April 22. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meeting tonight (April 16), 7:30 p.m. Rand mining district field trip April 19-20, meet at 10 a.m., Randsburg Post Office.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting Sunday, April 20, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m.

CHORUS—Rehearsals 7:30 p.m. Wednesdays. Concert at Madison High School, June 22, 3-5 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Trip to Rancho Marina on Salton Sea, April 26-27.

GARDEN CLUB—Spring rose show, April 19-20, Floral Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Friday; 10 a.m. to 5 p.m., Saturdays.

HI-FI MUSIC—Meeting April 22, 7 p.m., Wisenburg residence, 3521 Mt. Acadia, Clairemont.

ICE SKATING—GD family skate night, Thursdays, 6:30-8 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE—Workshop, April 18, 7:30 p.m.

MINIATURE RAILROAD—Work sessions, Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot April 27, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting April 17, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m, Radio communications for Borrego off-road races, April 19-20.

RIFLE CLUB—Senior shoot, 7:30 p.m., April 23. Junior shoot, April 19, 1 p.m., Gillespie Field Range.

ROCKHOUNDS—Gold Rock Ranch field trip, Ogilby, Calif., April 19-20.

SAILING CLUB—Meeting April 23, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Trip to Buckskin Point, Arizona, April 18-20. Meet, 7 p.m., CRA parking lot.

SQUARE DANCE—Dance Thursday, 8-10 p.m. Trip to Pomona April 19.

STAMP CLUB—Meeting April 24, 7 p.m.

TABLE TENNIS—Play Saturday, 10 a.m. to 4 p.m.

TENNIS — Spring tournament awards presentation, 7:30 p.m., April 17. Beginners class starts April 26, 10 a.m., CRA courts.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursday, 5:15 p.m.

TOURS — 16-day Caribbean Carousel, July 19-Aug. 3.

TROPICAL FISH—Meeting and workshop April 21, 7:30 p.m.

VOLLEYBALL—Teams now forming. Workouts Wednesdays, 7-10 p.m., Federal Bldg., Balboa Park.

WIVES CLUB — Potluck luncheon, 10:30 a.m., April 23.

OTV Manager's Son Leads in Chess Win

Verne E. Boyer Jr., 16, son of Verne Boyer of Convair's Dept. 516-0 at Cape Kennedy, recently led the Merritt Island High School chess club, of which he is president, to a first place victory in a countywide high school tournament.

Young Boyer has attended Merritt Island High school for two years while his father is serving as program manager for Convair's Complex 36 operational TV system at Merritt Island. He also recently was elected to the school's chapter of the National Honor Society.

Wives Elect New Officers

New officers for the Convair Wives Club were installed at Le Baron's during the regular monthly meeting April 16.

Officers are Mrs. Doris Browning, president; Mrs. Lorraine Hudson, 1st vice-president; Mrs. Lucile Dibblee, secretary and Mrs. Helen Ellsworth, treasurer.

Committee chairmen for the new year are Mrs. Anita Klepach, parliamentarian; Mrs. Flora Loftin and Mrs. Evelyn Morefield, membership; Mrs. Mary Gaus, photographer and historian; Mrs. Alice Chapman, newsletter and publicity; Mrs. Eleanor Bulman, amenities; Mrs. Vera Whitbey and Mrs. Rebecca Fyffe, hospitality; Mrs. Etta Weismantel, service hours; Mrs. Nadia McIntyre and Mrs. Annette Blust, potluck; Mrs. Violet Rheaume, charity; Mrs. Fran Thompson, crafts and Mrs. Margaret Brock, recipes.

The regular potluck luncheon for the club will be at 10:30 a.m. April 23 at CRA clubhouse. A new members tea is scheduled for May 28 at the clubhouse.

Behlman, Bickley Win Speech Tourney

Two General Dynamics Toastmasters Clubs' members won the Toastmaster's area speech contest April 7 at Miramar NAS.

First place went to Ray D. Behlman, Dept. 831-1, a member of Convair Club 3745. His speech was titled "A Code to Live By."

Herb Bickley of Dynamics Club 457 came in second with a speech titled "Success." He is the chief of the DCAS systems and engineering branch.

Water Skiing Trip On Colorado Planned

The Convair Don Diego ski club will have a water ski trip to Buckskin Point, Ariz. on the Colorado river April 18-20. Club members will leave at 7 p.m. April 18 from the parking lot at Kearny Mesa.

Cost of the trip will be approximately $15. Trip leader is Harry Eastman, ext. 3671 KM or 274-4982.

The club will have its annual races at the Mammoth Mountain ski area the weekend of May 2-4.

Fishing Club Plans Salton Sea Trip

CRA Fishing Club traveled to Lake Jennings March 29 for a day of angling followed by a pot luck supper.

Next trip is April 26-27 to Rancho Marina on Salton Sea. For details contact R. H. Browning, LF ext. 435.

AAU BOXING TICKETS ON SALE THROUGH CRA

Tickets for the National AAU senior boxing championships April 19 at San Diego International Sports Arena are now on sale at all CRA outlets. The $4 tickets (a $1 saving) will provide admission both to preliminary bouts at 2 p.m. and finals at 8 p.m.

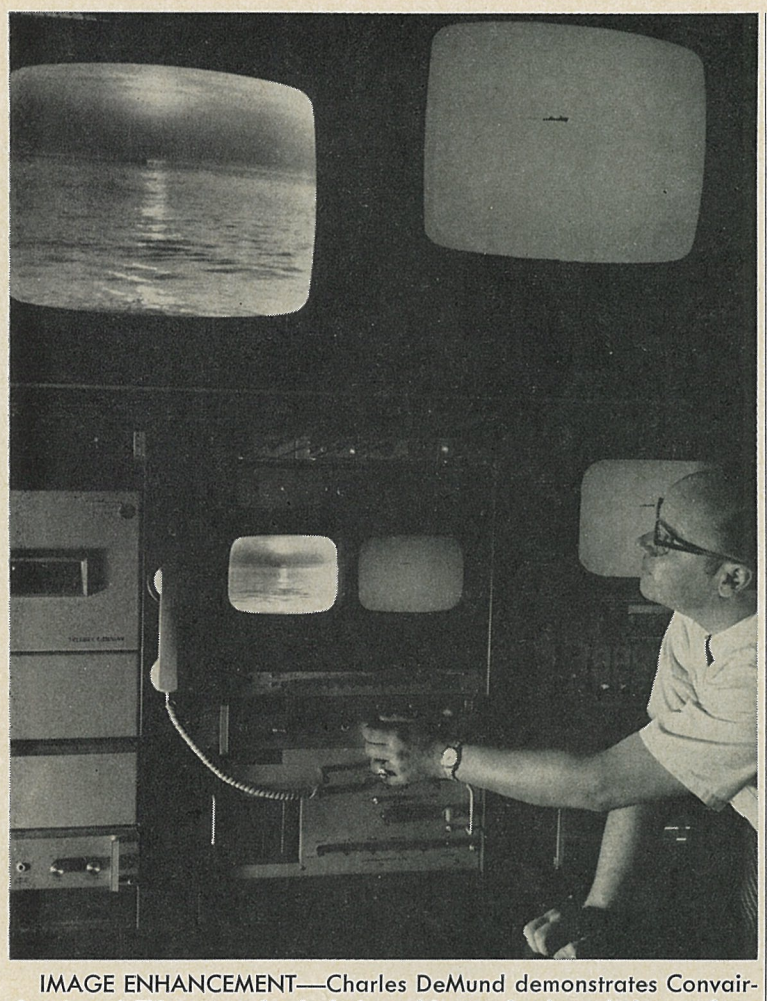


IMAGE ENHANCEMENT—Charles DeMund demonstrates Convair-developed TV system for isolating objects of selected shapes from picture background. TV monitors at left show marine scene while in those at right everything has been filtered out except fishing vessel.

'Signal Enhancement' Singles Out 'Targets'

Convair division has taught a television system to find the proverbial "needle in a haystack."

Video processing equipment for "signal enhancement" developed by the division for use with standard TV cameras can remove all elements or shapes from a scene except those that have been programmed to remain.

The system currently is being used for scanning radiographs of composite materials being developed in division-funded research and development studies.

Through use of selected process filters, only those tiny filaments that are broken or are out of normal alignment show up on the TV monitor. All background elements in normal alignment are "dropped out" of the processed image.

The proprietary Convair system has been perfected by Charles N. DeMund, a photographic specialist in motion pictures and television Dept. 516-0.

An image of almost any shape can be detected electronically and its image enhanced and separated from background "clutter."

The system has potential applications ranging from automatic scanning of reconnaissance photos to enhancing underwater television images.

DeMund said the video enhancement and processing technique can be adapted for automatic scanning of radiographs or other types of pictures. An automatic scan stop or alarm signal can be used to alert the operator to programmed-image detection as it occurs.

The system can be operated in "real time" at standard television scanning rates. Previous methods of dissecting video signals required processing such signals by computer at slower rates.

A "processed" picture, when desired, can be superimposed over the unprocessed scene from which it has been taken to pinpoint location of detected elements on the original.

DeMund has been assisted in development of the system by Wallace Henshaw, Complex 39 operational TV system assistant manager, and James Black, a Dept. 516-0 photographic specialist. Work on the system has been under way on a part-time basis about three years.

Robert T. Anderson, a senior research engineer in process development Dept. 572-2, said use of the TV image enhancement system has eliminated slow and tiresome use of a magnifying glass to scan radiographs of the aluminum-boron composite test specimens.

"Through real time video processing, the images of normal elements are eliminated and all misplaced and broken filaments appear as white lines and dots on the screen," he said.

"With the video system a large area can be magnified and scanned at once. With a magnifying glass, only about a ½-inch-diameter field could be examined at one time in an extremely tedious and time-consuming process."

Anderson also has used the TV enhancement system to locate tiny defects and porosities in aluminum welds.

Background below a pre-set density level is filtered out and the "processed" image enlarged to show microscopic defects within the weld.

The defects, appearing in black on a white screen or white on a black screen, can be located and measured quickly.

Anderson said the TV system also should be beneficial in analysis of data from other forms of non-destructive testing.

Convair also has capability for "digitizing" TV signals for processing by digital computer. In that system, a TV camera scans an X-ray negative and optical density is translated and recorded on magnetic tape for subsequent computer processing.

DeMund has been with Convair 11 years and was employed five years previously in the KOOL-TV production department in Phoenix. He filmed John Glenn's recovery in the Atlantic for the Convair-produced documentary "Friendship 7."

SD Men Contribute To Fractures Work

Two Convair men, Dr. N. R. Adsit and W. E. Witzell of Dept. 572 have written a paper on the "temperature effects on fracture" which has been included as a chapter in the most complete treatise on fractures yet written, the seven-volume "Fractures: An Advanced Treatise," edited by Harold Liebowitz.

In addition, Witzell recently received a letter from John A. Fellows, director of technical programming for the American Society of Metals, expressing "warm thanks . . . for your important share in making the 1969 WESTEC Conference a real success."

Many Defer Distribution Of Savings Plan Funds

Of 11,000 "charter members" of the General Dynamics Savings and Stock Investment Plan, 45 per cent chose to leave their 1965 savings and earnings in the plan while 55 per cent requested and received "short term distribution" in February of cash and securities totaling $2,050,118 in value.

"Charter members" were salaried employes at most of GD's division/subsidiaries. They were the first to have an opportunity to join the Plan, in September, 1965. The distribution for 1965, therefore, included savings, earnings and General Dynamics' contributions (50 cents for every $1 saved) covering only three months of that year.

The short term distribution included $1,237,038 in employe savings, $618,515 in GD contributions, and earnings to Dec. 31, 1968 of $194,561.

The $2,050,118 total was composed of 6,339 shares of GD common stock and a cash payout of $1,757,724. Cash reflected investment in government bonds valued at $782,158, a diversified portfolio account with market value of $893,823, and fractional shares of GD stock valued at $81,743.

Algie A. Hendrix, Corporate vice president, said overall return was equivalent to earnings 65¾ cents for every $1 invested by members.

Each employe's investment increase in the plan, of course, was dependent on performance of the plan option he had chosen.

Hendrix said 1965 accounts not withdrawn were reinvested by Bankers Trust Co., trustee, and will continue to earn dividends and/or interest.

"Company contributions for these deferred 1965 accounts are now vested," he said. "This means those members who left their 1965 contributions and earnings in the Plan now have a permanent, non-forfeitable right to the company contributions for 1965."

Approximately 75 per cent of General Dynamics eligible salaried employes are now saving an average of 7.5 per cent of their salaries through the Plan.

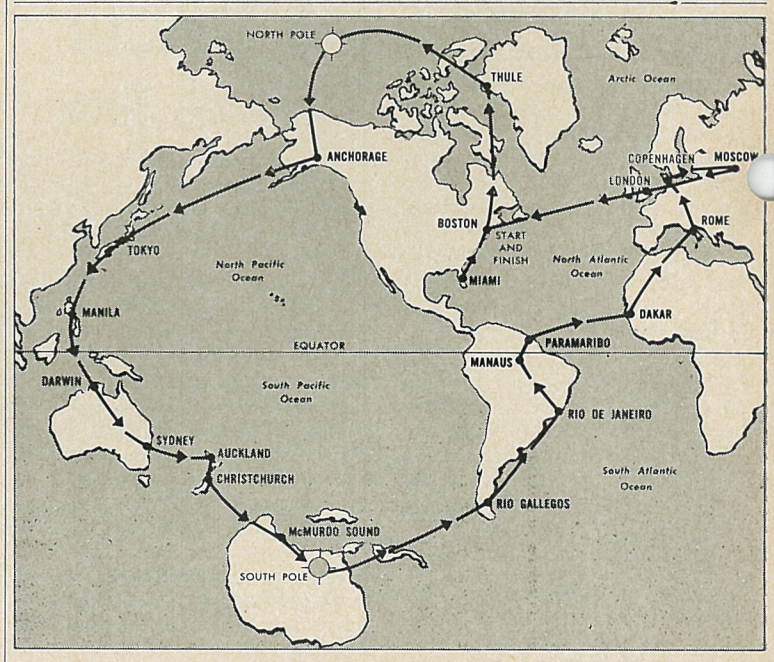
"This is an excellent program for systematic savings and, in addition, provides opportuniti for our employes to become Gen eral Dynamics shareholders," Hendrix said.

Eligible employes with more than one year of continuous service may enroll in the Savings and Stock Investment Plan by completing an application and returning it to the appropriate industrial relations office at least 30 days prior to any quarterly enrollment date. The enrollment dates are Jan. 1, April 1, July 1, and Oct. 1.

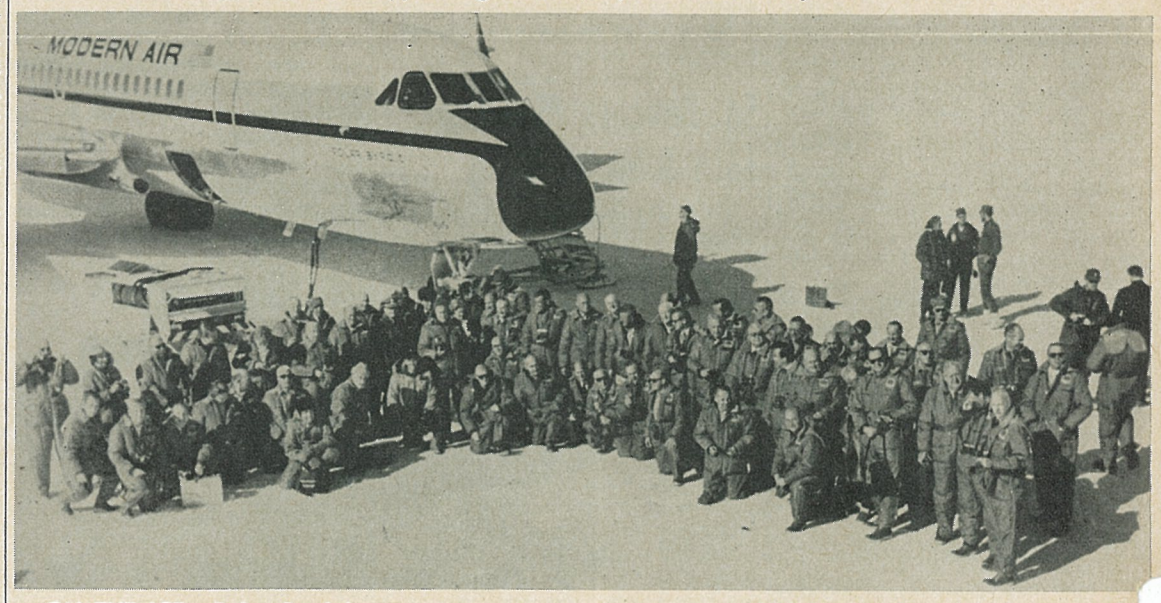
30,000 Now Saving In Investment Plan

More than 30,000 General Dynamics employes now are saving regularly as members of the Savings and Stock Investment Plan.

Of these, 19,500 are hourly employes whose average contribution to the Plan (in which General Dynamics adds 50 cents to every $1 saved) is 5.32 per cent of wages.



ROUTE—Shown is route flown by Convair 990 carrying 63 passengers (at $10,000 each) on special "air cruise."



ON THE ICE—Polar Byrd I passengers pose on ice runway of McMurdo Sound before crossing South Pole.

$10,000 a Passenger

Convair 990 Flies Over Both Poles

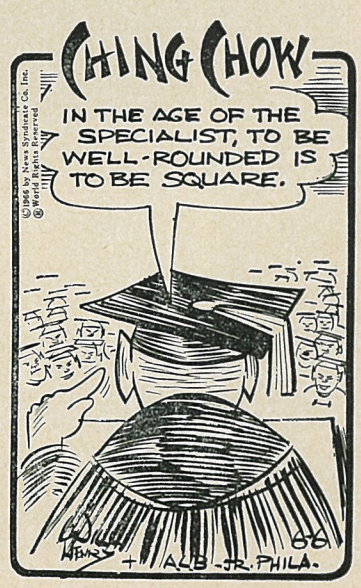
A six-year-old Convair 990 recently flew 63 passengers on a 40,000 mile world-spanning journey by way of both polar ice caps to make the first trans-polar flight "around" the globe.

Christened "Polar Byrd I," the Modern Air Transport plane made the history-making jaunt last November. The chartered flight was completed in 26 days, touching all six continents and flying over both poles while visiting 19 world cities including Moscow, USSR.

The Convair-built craft was specially outfitted by Modern Air to provide sleeping and leisure quarters for the corporation presidents, board chairmen, doctors, lawyers and retired businessmen who paid $10,000 apiece for the trip.

Itinerary for the "global vacation" included hunting and fishing in such places as the Brazilian Amazon and Australian bush country! The vacationing sportsmen stalked kangaroo, wild boar and buffalo in Australia and searched for alligator along the Amazon. Foregoing their hunting activities, the world travellers frollicked with the seals on the Antarctic ice cap.

Other highlights of the flight included diplomatic receptions in world capitals, an audience with the Pope in Vatican City and a side trip to the Russian capital. (This was the first commercial charter flight ever permitted inside the Soviet Union.)



The veteran Convair plane performed admirably, according to Modern Air officials. Her skins still gleamed after weathering world climates from equatorial tropics to sub-zero polar ice.

Within hours of the flight the jetliner, reconfigured to its normal capacity, rejoined Modern Air's world flight schedule.

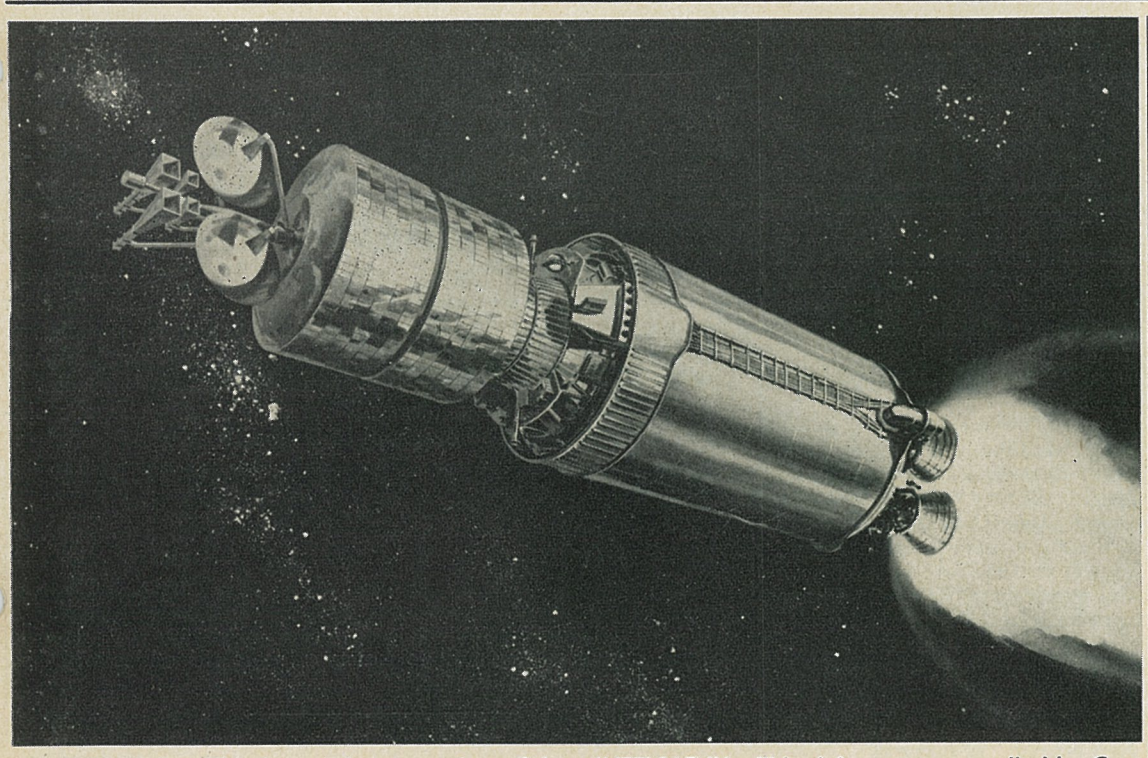
Modern Air Transport was chartered for the flight by Admiral Richard E. Byrd Polar Center in Boston, Mass. whose members made up most of the passenger list.

Modern Air is a Miami, Fla. based line and operates five Convair 990s. They are currently negotiating for future "polar flights" to take off from both the U. S. and Canada.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 9 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 30, 1969



INTELSAT IV—This is artist's conception of how INTELSAT IV will look in space, propelled by Convair's Centaur. Atlas/Centaur launch vehicles have been selected to place communications satellite into orbit early in 1971.

Atlas/Centaur Selected For Launching Two Commercial Satellites

Convair's Atlas/Centaur has been selected as the launch vehicle for two INTELSAT IV communications satellites.

Jack L. Bowers, Convair general manager, termed the selection of Atlas/Centaur a "significant achievement by Convair."

"It marks the first time that the Atlas/Centaur has been named as the launch vehicle for a commercial mission and it enables the division to fulfill one of the major 1969 objectives — securing of two new Atlas-Centaur missions," he added.

The Communications Satellite Corp. (COMSAT), as manager for the International Telecommunications Satellite Consortium (INTELSAT), and the National Aeronautics and Space Administration will enter into an agreement for the purchase and launch of two Atlas/Centaurs with an option for the purchase and launch of two additional vehicles.

INTELSAT IV is the next generation of commercial satellites which will be launched by INTELSAT.

The first INTELSAT IV is scheduled to be launched from the Eastern Test Range early in 1971 into a 22,300 mile-high synchronous orbit over the equator. It will be designed to carry more than 5,000 two-way voice circuits for trans-Atlantic and trans-Europe communications relay.

The satellite, eight feet in diameter and nearly 18 feet high, can also be programmed for a combination of different kinds of communications transmissions or, if it were to be used entirely for television, 12 TV channels simultaneously.

Selection of Atlas/Centaur was made by the Interim Communications Satellite Committee, governing body of the 68-nation consortium, meeting in Washington.

The committee noted that the use of Atlas/Centaur "could provide a capability for future growth in spacecraft weight . . .

Convair has been competing for COMSAT business since 1964. Points stressed in the proposals which led to the selection of Atlas/Centaur were low cost combined with superior performance.

According to Bob Benzwi, Centaur program office, other possible uses of Atlas/Centaur in the communications satellite field could be in the multi-service U. S. pilot domestic satellite program which is under study by the Federal Communications Commission.

The launch vehicles could also be used, Benzwi said, in a full scale domestic satellite system envisioned for the early 1970s by communications planners. This would consist of four high capacity satellites operating with more than 150 earth stations. Such a system would have 16 commercial TV channels, four educational channels and 28,000 message channels.

Electronics-SD Names Reese Eng. Director

Robert F. Reese, former director of engineering for a division of Philco-Ford Corp., has been named director of engineering for Electronics-SD by D. C. Prim, general manager.

In his new position, Reese will be responsible for Electronics-SD research and advanced technology, systems engineering, data systems and analysis, equipment engineering, and design assurance and engineering services activities.

Reese has been director of engineering and acting director of education operations for Philco-Ford's Education and Technical Services division in Fort Washington, Pa., since 1965 with responsibility for proposal and program management, long-range planning, quality assurance, and production and distribution of education and training materials.

He previously served at Philco-Ford's Aeronutronic division in Newport Beach, Calif., as manager of re-entry countermeasures systems from 1963 to 1965, and as manager of ground electronics, range system, and systems analysis from 1959 to 1963.

During this period, he was responsible for development and production of display and telemetry equipment for NASA's Mission Control Center in Houston, planning and engineering of Pacific Missile Range world-wide range instrumentation, and Air Force spacetrack astrodynamic programming and tracking techniques.

Reese was employed by Ramo-

(Continued on Page 2)

Con-Trib-Club Okays $31,695

Grants totaling $31,695 were approved by the Convair Employes Con-Trib-Club committee in their April meetings.

Included was $10,095 in camperships funds. For the sixth-grade camper program, the Cajon Valley School District received $100; Chula Vista City Schools, $170; Lemon Grove School District, $40; Poway Unified Schools, $60; San Diego City Campership Committee, $450; San Diego County EMR Special Classes, $150.

For summer camps the Boy Scouts received $1,800; Camp Fire Girls, $625; the Girl Scouts, $1,200; Jewish Community Center, $350; Salvation Army, $1,650; San Diego City/County Camp Committee, $2,000 and the YMCA, $1,500.

Other awards were $10,000 to the American Cancer Society; $5,000 to the Tecolote Youth Council, Inc.; $100 to the Tuberculosis & Health Association of San Diego; $2,000 to the Junior Achievement of San Diego, Inc.; $1,500 to the San Diego County Citizen's Scholarship Foundation; $3,000 to the YMCA.

New Electronics-SD Radar Field Tested in Viet Nam

Electronics-SD's new AN/PPS-10 lightweight surveillance radar set, considered the most advanced ever developed, has been undergoing extensive field testing in Viet Nam by the U. S. Military Advisory Command, the Army, Navy, Marines, Air Force, and by Australian and Republic of Viet Nam forces.

J. N. MacInnes, Electronics-SD product manager-special projects, delivered first production units to the Department of Defense Advanced Research Project Agency (ARPA) Research and Development Unit in Viet Nam for the field tests and spent eight weeks in Viet Nam instructing combat troop leaders in their use and participating in Navy armored-assault-boat night patrols on the Mekong River.

MacInnes personally detected a truck moving over a previously undiscovered enemy supply trail in a jungle area along the Mekong with one of the radar units while on one of the river patrols.

Before returning to San Diego, he was awarded an ARPA Certificate of Appreciation "for outstanding service to the Advanced Research Projects Agency's mission of research and development in support of the counterinsurgency efforts of the Republic of Viet Nam."

The AN/PPS-10, complete with its tripod, batteries, battery charger, and remote-control unit, weighs less than 10 pounds.

It has been developed with Company funding under the direction of George W. Eaton, program manager, assisted by Art Martens and Jim Ackerman.

The versatile unit, which outperforms previous models weighing more than three times as much, utilizes microcircuits, a solid state, low voltage transmitter, and a nylon-fiberglass housing. It can be hand held or operated from almost any location or vehicle.

Both the radar and its two-pound remote control unit have toggle switches to control automatic or forward and reverse motor-driven scanning, bearing and ranging meters, and a small red light flasher for movement detection warning during night operations.

An "all range" channel permits survey of all moving targets within signal range. A "discrete" channel enables the operator to

(Continued on Page 2)

Patents Issued on Six Technology Concepts

The U. S. Patent Office in recent weeks has issued patents to General Dynamics for six technological concepts developed by Convair division engineers.

Included were patents covering the Dynaflare tube flaring machine, a flared-tube fitting seal, a thermal attitude control system for hypersonic space vehicles, a simple and effective heat exchanger, an automatic frictionless guided welding apparatus, and a standby automatic water-methanol system for multi-engine aircraft.

Dynaflare now is being produced and marketed by Dynaflare Industries, Inc., of Los Angeles under a licensing agreement with Convair **(GD/NEWS, June 19, 1968).**

Neil Martin, Convair patent counsel, said issuance of the Dynaflare patent has resulted in release of an initial payment of $40,000 to the division from Dynaflare Industries. The division also will receive a percentage of net sales.

Joseph E. Carlin, manufacturing development engineer who designed Dynaflare, received a $7,950 initial payment from Convair, based on the division patent plan's percentage formula and amount of the licensee payment.

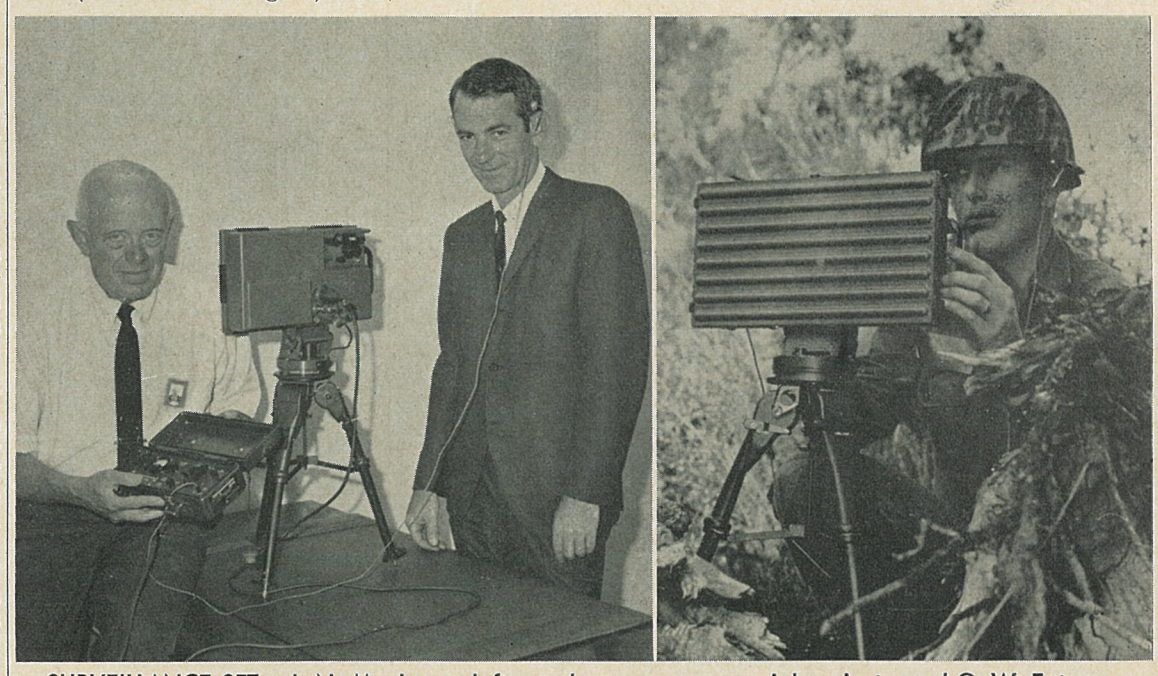
The flared-tube fitting seal was designed to improve sealing characteristics and prevent gas leakage at extreme temperatures and pressures and was conceived by William A. Prince and William E. O'Brien.

The patented thermal attitude control system could be used for cooling and attitude control of manned or unmanned hypersonic spacecraft, missiles or nose cones during launch and re-entry.

It was developed by Bernard M. Leadon, Wilbert V. Carter, and William H. Gallaher and was designed for a variety of potential applications.

With this system, coolant fluid can be ejected through a sharp-pointed nose and other "leading

(Continued on Page 4)



SURVEILLANCE SET—J. N. MacInnes, left, product manager-special projects, and G. W. Eaton, program manager, demonstrate lightweight surveillance radar set being produced by Electronics-SD. Right photo shows Marine using set under simulated combat conditions. First production units are being field tested in Viet Nam.

New Electronics-SD Radar Field Tested in Viet Nam

(Continued from Page 1)

scan narrow selective ranges at selected distances. Audio signals from both can be combined if desired so the operator can listen to all "all range" targets while ranging on a specific "discrete" target.

The radar operates from two self-contained 12-volt batteries that can be recharged from truck or jeep power sources. Each battery will provide power for more than 10 hours of operation.

A coil of thin-ribbon steel, when pulled out of the radar's fiberglass tripod base, coils to form sturdy cylindrical support legs. Accessories, including a back rack and spare batteries, battery charger and cables, are provided.

F. P. Stoklas, Electronics-SD marketing director, said the Army is expected to issue a request for proposals for a quantity order of lightweight surveillance radars early in fiscal year 1970.

"Other companies are producing competitive sets," he said. "Competition will be tremendous."

Electronics-SD has petitioned the Munitions Control Board of the U. S. State Department to license AN/PPS-10 sales to selected foreign countries.

"There has been a lot of interest from foreign governments," MacInnes said. "We plan marketing abroad, probably beginning in Europe, as soon as permits are received."

MacInnes had little language difficulty. "Two Vietnamese officers who spoke English translated for the others," he said.

The 3rd Marine Amphibious Force has been testing the radar units in the North near the DMZ, the Military Advisory Command-Viet Nam near the coast, the Naval Forces-Viet Nam on the Mekong near Dong Tam, the 7th Air Force near Phu Cat and the Australian Forces-Viet Nam near Nu Dat.

* * *

One of Electronics-SD's AN/PPS-10 radar units, extensively damaged by shrapnel, was returned from Viet Nam recently for repair.

Forrest Letzring, plant engineer, promptly prepared a photo display of the damaged unit — awarding it a "purple heart!"

Repair of the damages was completed and the unit was "back in action" in Viet Nam in less than a week.

Is it news? Pick up a phone and call GD/NEWS

Log Book Entries

Awards

CONVAIR

Employe Suggestion awards approved for the week ending April 11.

Dept. 027, B. R. Armstrong, $15; 059, N. M. Austin, $53.30; 401, F. Bamber, $20.40; 780, J. Barnes, $15; 985, G. M. Bentley, S. F. Lopez, $7.50 each (joint award); 144, W. L. Bilbrey, $15; 020, E. Bowers, $51.90; 831, V. E. Distad, $36.90; 027, P. J. Estrada, $186.30 (two awards); 027, J. L. Fuller, $16.30; 027, W. H. Gifford, $15; 401, D. J. Harms, $15; 840, J. C. Hydle, $46.50; 533, G. M. Jackson Jr., $76.80; 059, B. W. Jones, $29.60; 045, J. T. Kucala, $15; 027, W. Lane, $55.90; 015, M. E. Long, $15.

Dept. 001, B. Martin, H. G. Mondy, $20.80 each (joint award); 842, J. F. Meeker, $149.80; 027, J. Mejia, $17.30; 144, C. E. Mifflin, $15; 511, L. M. Moore, $50.70; 143, J. J. Murphy, $15; 143, J. J. Murphy, 733, L. Pajak, $7.50 each (joint award); 401, J. R. Parga, $134.10; 027, F. Patruno, $75.40; 985, P. W. Rogers, $57.80; 143, M. J. Russell, $90.45; 979, L. G. St. John, $15; 979, R. W. Sather, $15; 015, M. Shimatsu, $27; 059, J. L. Sinnott, $41.20; 985, J. F. Stolle, $51.90; 015, J. T. Tattoli, D. L. Weelborg, $12.50 each (joint award); 149, J. F. Taylor, $41.30; 027, H. F. Thompson, $107.60; 401, J. E. Williams, $36.40; 401, W. Wrieden Jr., $15; 144, J. Zoll, $15; 553, J. J. Zorrilla, $15.

Employe Suggestion awards approved for the week ending April 18.

Dept. 979, C. D. Amos, $15; 780, J. Barnes, $15; 143, F. A. Baugh, $15.80; 401, D. J. Blue, $38.10; 820, J. J. Borrego, $15; 015, A. J. Capuccini, $15; 516, W. E. Carter, $15; 780, C. M. De la Bretonne, $51.30; 015, J. B. Denton, $93.20; 027, L. Donahoo, $143; 578, J. C. Easton, $15; 761, C. J. Eskew, $15; 962, R. T. Fox, $100; 761, P. E. Grasmick, $15; 250, T. F. Gurbacki, $15; 574, L. Herrera Jr., $66.20; 001, E. H. Hussong, $97.40; 574, J. S. Jacobsen, $758.20; 015, S. S. Jenson, $15.

Dept. 401, J. R. Jones, $35.20; 015, A. A. Lockwood, $15; 954, B. H. Lundquist, $73.20; 027, J. McCarthy, $15; 027, B. T. Medearis, $28; 016, M. G. Mercer, $15; 027, D. R. Noon, $15; 001, G. Novello, $15; 574, W. H. Pfender, $15; 144, F. Piersall Jr., $15; 454, R. O. Prock, $98.60; 170, L. R. Reardon, $265.60; 979, M. J. Robertson, $15; 027, J. A. Shaw, $15; 027, J. B. Simon, $66.50; 027, M. C. Tracy, $23.60; 146, L. J. Triska, $114.70; 001, G. W. Wiese, $131.90; 027, J. C. Wilson, $28.60.

Personals

CONVAIR

The family of Ralph Gumtz, Dept. 403-1, acknowledges with grateful appreciation your kind expressions of sympathy.

* * *

Words cannot convey our grateful appreciation to the very thoughtful people of Dept. 027 after the loss of our daughter Cathy.

Mrs. and Mrs. E. W. Pagel, Dept. 027

Service Emblems

CONVAIR

Service emblems due between April 15 and April 30.

Thirty-year: Dept. 202, U. V. Laird.

Twenty-five-year: Dept. 019, R. D. Bauld; 031, R. A. Romo; 046, D. R. Bryson; 401, W. A. Phipps; 515, A. Wilson; 731, V. E. Hoagland, 831, A. M. Goldstein.

Twenty-year: Dept. 002, C. W. Levell; 015, T. J. Nilsson; 045, E. F. Flukey Jr.; 057, W. G. Matlock; 195, L. W. Dean; 401, K. F. Eveland; 514, R. E. Dietz; 756, J. R. Estrada; 780, Ione H. Brown; 831, V. E. Distad; 840, R. G. Anderson; 951, J. S. Foster.

Fifteen-year: Dept. 149, Ethel M. Myers, R. Vazquez; 191, Dorothy E. Smith; 250, P. E. Moore Jr.; 401, A. Lutz; 545, H. L. Merritt; 553, E. C. Madsen; 780, May Murray, Chris H. Pederson, M. M. Punneo; 810, H. A. Billings; 832, Anna K. Parish; 834, Marlene L. Byrne; 842, C. T. Chunn.

Ten-year: Dept. 130, A. G. Bullard; 170, C. H. Hoffman, C. Wronski; 198, Dorris C. Imel; 250, O. W. Morris; 400, Harriet E. Madsen; 518, Peggy A. Richards; 526, Nina S. Reed; 544, H. R. Newcomb; 566, D. Carini, A. J. Crouch; 572, D. A. Rau; 574, J. D. Brooks; 731, D. Arce Jr.; 780, E. Patchett, P. F. Williams; 802, A. F. Krohn; 820, C. R. Stith; 840, Viola C. Arosin; 860, E. J. Fortin Jr.; 954, Patricia L. Owens; 985, H. E. Crabtree, R. L. Davis, J. L. Morris.

ELECTRONICS

Twenty-year: Dept. 614, S. W. Saddon; 921, F. G. Belsky.

Invention Disclosures

CONVAIR

BOND—W. H., Dept. 570. Linear A. C. Belt Motor.

CHADWICK—T. H., Dept. 145-1. Aircraft Course Calculator.

KESSEL—P. A., Dept. 531-2. Endless Belt Landing Gear.

STEPHENS—P. B., Dept. 584-0. Low Volume, Low Radar Cross Section Inlet.

YAGER—E. K., Dept. 507-0. Resonant Reed Frequency Discrimination Device.

Rider-Driver

CONVAIR

RIDE WANTED—From Lakeside area to Kearny Mesa plant, 7 a.m. to 3:30 p.m. shift (gate 1). Call Kathleen Freeman, ext. 1113 KM or (home) 443-6435.

RIDE WANTED—From Washington and 2nd St., El Cajon to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Jerry Donnelly, ext. 694 LF or (home) 442-8027.

RIDE WANTED—From Hillcrest, Mission Hills area to Kearny Masa plant. 1st shift, 8 a.m. to 4:30 or 4:45 p.m. Call Mitchell ext 1666 KM.

Retirements

CONVAIR

AIKEN—Richard R., Dept. 250-5. Seniority date Oct. 21, 1942, retired April 4.

BAJEMA—Charles, Dept. 015-0. Seniority date Feb. 20, 1952, retired April 4.

HARRISON—Tynie L., Dept. 839-2. Seniority date Jan. 8, 1951, retired April 14.

HUBER—Ross H., Dept. 574-3. Seniority date April 12, 1955, retired April 16.

WILLIAMS—Robert E., Dept. 027. Seniority date Sept. 17, 1946, retired April 14.

Births

CONVAIR

WEILAND—Son Darin David, 8 lbs., 4½ oz., born April 12 to Barbara and Paul Weiland, Dept. 460-0.

Deaths

CONVAIR

COLPEAN—Roy C., retired April 20, 1959, died April 15. Survived by his daughter Celest Brown.

FERRIS—Michael J., retired Nov. 17, 1964, died April 3. Survived by his wife, Elizabeth.

MARTINEAU—Peter N., retired Aug. 31, 1965, died April 6. Survived by a brother Albert J.

General Dynamics News

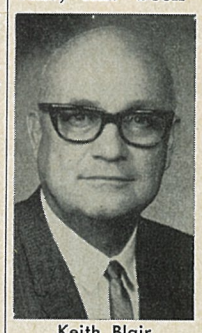
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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

K. G. BLAIR ELECTED TO NATIONAL OFFICE

Keith G. Blair, head of library and information services at Convair, has been elected advisory council chairman-elect of the Special Libraries Association.



Keith Blair

The association has approximately 7,400 members and is the second largest organization of its kind in the United States.

Blair has been with General Dynamics since 1957 and has served as engineering librarian, library supervisor and technical information specialist. Before coming to Convair he was chief of reference and bibliographic services at the Navy Electronics Laboratory for 10 years.

A charter member of the San Diego chapter of the Special Library Association, Blair has taught library science at San Diego State College.

Blair graduated with a BA degree from the University of Iowa and received a degree in library science from Columbia University.

Electronics-SD Names Reese Eng. Director

(Continued from Page 1)

Wooldridge Corp. (now TRW Systems, Inc.) from 1956 to 1959 as head of the antenna and microwave laboratory and a radar



ROBERT F. REESE

project engineer, with duties including missile guidance radar system engineering and technical direction.

From 1945 through 1956, he was chief project engineer for Transco Products, handling development of missile and aircraft antenna and microwave components, with Douglas Aircraft Co. as head of its radio systems engineering laboratory, with Stanford Research Institute as a research engineer, and with Trans-World Airlines as an electrical engineer.

Reese holds BS, MS and Engineer degrees in electrical engineering and physics from Stanford University.

He was in the Navy during World War II and had duty as a radar school instructor before being discharged in 1945 as a chief radio technician after five years service.

Procedure Changes On Airline Tickets

As a convenience for employes traveling on company business, arrangements have been made for advance pickup of airline tickets at in-plant cashier's offices instead of at San Diego International Airport.

The travel reservations office will advise the traveler when his tickets are available.

Questions on the new procedure may be directed to L. G. Facka, ext. 1588 KM.



FIRST DEGREE—John Rodenrys, of Convair's Dept. 574-3, center, inspects diploma after completing work for master's degree from United States International University in Management Science. Degree was first awarded to a Convair employe who used in-plant courses offered by USIU. With Rodenrys is Jack Croft, left, chief of educational services at Convair, and Dr. Andrew Papageorge, assistant dean of USIU graduate School of Business.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—A bottleneck occurs each morning at the Washington Street entrance to the Lindbergh Field plant and Marine Corps Recruit Depot due to confusing street and signal markings. The westerly left lane has "left turn only" painted on the street, yet the signal light shows a straight-ahead arrow into faintly painted lines across the intersection.

A—If you are in the left lane, you must turn left as the signal indicates; if in the right lane, you must proceed straight ahead. City traffic engineers now are surveying ingress and egress at the Washington Street plant entrance to see what improvements are possible.

★ ★ ★

Q—Doesn't the new procedure of payroll sending vacation checks to the cashier instead of the employe's department cost more by having employes walk to the cashier's office?

A—Vacation checks aren't sent to the cashier except in cases where the request was received too late for inclusion with the regular paycheck. Checks for last week of work before vacation and other absentee checks are sent to the cashier and normally are picked up by department clerks Monday mornings.

★ ★ ★

Q—The last time I went to the salvage yard, I saw some women turned away because they had on the wrong type shoes. We have an item in *GD/NEWS* specifying that children and pets are not allowed. Why not add to it and also put up a sign that informs people on such rules?

A—The same general safety rules apply to the employe store on Saturday as they do throughout the week in the plant. Signs are being changed and a statement concerning acceptable shoes will be included in the *NEWS*.

★ ★ ★

Q—**GD/NEWS** reports availability of various discount tickets in separate stories. Wouldn't it save space and be more convenient for readers if you carried them all under one heading?

A—This was the policy at one time and somehow the practice was sidetracked. It will be revived.

★ ★ ★

Q—Why can't an employe having a dependent over 21 who lives at home apply for a family membership in the CRA Health Club?

A—He can. Age is not considered.

★ ★ ★

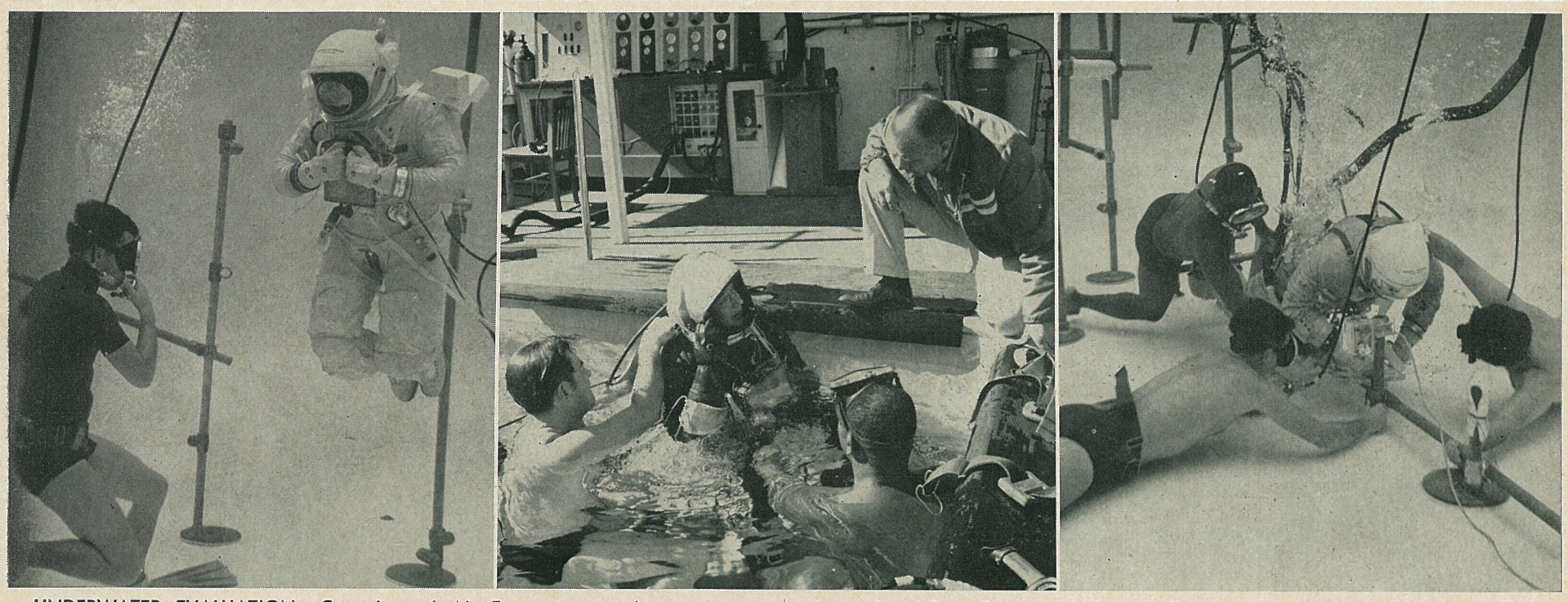
Q—During the past 18 months civic groups have been raising funds for a new USO. Has Con-Trib-Club or Convair helped in this worthy cause?

A—The Convair Employes Con-Trib-Club has pledged $12,000, payable at $4,000 per year for three years, beginning Aug. 1, 1968. A plaque will be placed in the USO elevator with "Donated by General Dynamics Convair Employes Con-Trib-Club."

★ ★ ★

Q—Why can't tuition be paid in advance for courses that apply under tuition refund? Even though ultimately refundable, fees are often high enough to deter enrollment.

A—One of the tuition refund qualifications is to complete a course with a C average or better and this cannot be determined until the course is complete.



UNDERWATER EVALUATION—Convair and Air Force personnel run tests to determine differences in efficiency between air-pressurized and water-pressurized spacesuits in null-buoyancy simulation of weightlessness. In left photo, Robert Brazell, Convair test subject, is checked for null-buoyancy in water-pressurized Gemini suit in Convair test facility as Gary Thomson, test conductor, observes. Center photo shows Brazell at conclusion of dive in air-pressurized Mark 4 suit. S/Sgt. Wayne Reffner, left, assists with helmet removal as T/Sgt. Roland Fancher, also in water, and Dick Wolf, facilities coordinator, watch. In right photo, Brazell performs "Purdue pegboard" dexterity test in air-pressurized suit. Others, from left, are T/Sgt. Fancher, assist diver; Thomson; and S/Sgt. Reffner, safety diver.

'Impossible-to-Purchase' Mills Designed and Built by Convair

When Convair division's DC-10 fuselage project required a pair of impossible-to-purchase milling machines, its tool design group and tool manufacturing department promptly designed and built them.

One, a radial profile mill, is now in operation, while a longeron taper mill is in final assembly stages.

The two machines took four months to design and build and, according to Sid Smith, tool design group supervisor, the profile mill is performing even better than anticipated.

Resembling a donkey-powered "grist mill" used in ancient times to grind flour, the profile mill works in a circular fashion from a center axis. It is used to cut fuselage formers and belt frames for DC-10 interiors.

Mounted on a specially designed round bed, the machine's spindle is guided by two cams which follow a template mounted under the metal part being cut. The part and template are held in position by a series of pneumatic clamps.

Through use of the cams and a set of tracer valves, the new mill is capable of cutting varied sizes of parts in a single sweep around its table. The operator follows the cutter, removing each part as it is cut and replacing it with a fresh one — allowing for continuous production. The mill cuts both edges of the metal part in separate, but identical, operations.

The profile mill's spindle is operated by a 3490 rpm 7½ hp drive while the machine body is powered around the bed by a gear-rack type drive mounted on the inside radius of the table.

The longeron taper mill, with its three spindles will be capable of cutting a complete fuselage longeron for the DC-10 in a single pass down its horizontal table.

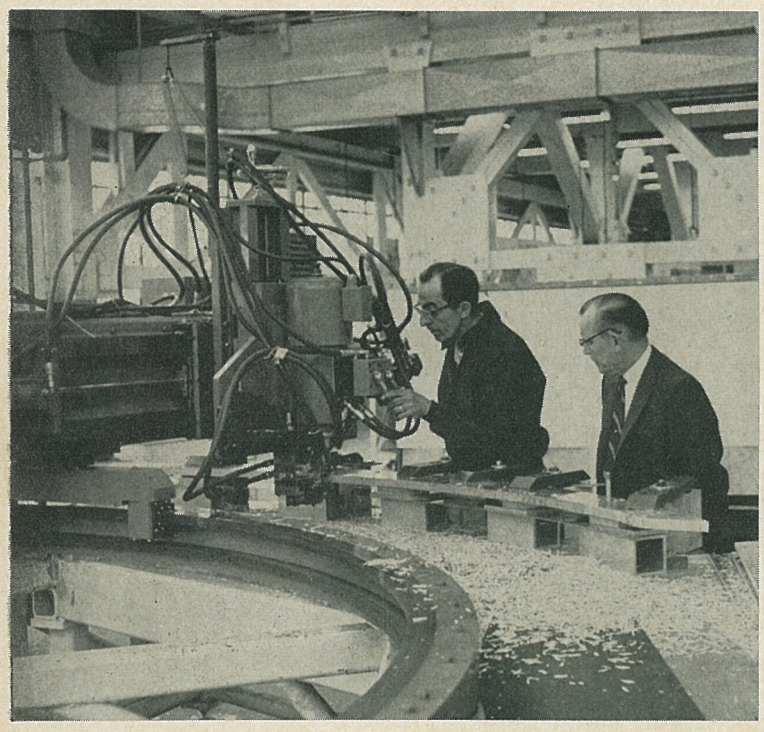
Currently set in place in Lindbergh Field plant Bldg. 2, the radial profile mill will be moved into permanent position in Bldg. 1, along with the longeron machine.

DEPARTMENT ENSURES ACCURACY OF DATA

A new department of engineering quality assurance has been established at Electric Boat division. Harry E. Peterson Jr. heads the department, which will ensure accuracy and adequacy of data produced by the engineering department and its conformance to specifications, standards and contracts.

ELECTRIC BOAT GETS "PLUG" IN SUB FILM

Electric Boat division gets a good plug from actor Rock Hudson in the motion picture "Ice Station Zebra." After the submarine commanded by Hudson survives a plunge of more than 1,200 feet, he turns to a crewman and says, "Remind me to thank Electric Boat."



RADIAL ROUTER—Jig builder Larry Von Dran, Dept. 401-5, uses new Convair designed and built radial router to cut tooling details on metal part as Sid Smith, Dept. 400-3 tool design group supervisor looks on. Smith's group designed machine for use on DC-10 fuselage parts.

NASA Manager Praises Launch

Convair General Manager Jack L. Bowers received the following message from William R. Dunbar, Centaur project manager for NASA Lewis Research Center, regarding the AC-19 launch of Mariner 7:

"Congratulations and well done to the entire Atlas/Centaur project team on the launch of AC-19/Mariner 7. The AC-19 and 20 launches mark another first in the U. S. space program in that this is the first time a dual planetary mission has achieved two successful launches of working spacecraft into planetary orbits in a single opportunity . . .

"The entire . . . performance is truly a credit to the entire team. . . .

"Extend my thanks and sincere admiration and appreciation to all the individuals concerned who worked long hard hours . . ."

Air and Water Pressure Space Suits Compared

A series of underwater tests was conducted for the U. S. Air Force recently at Convair division's Kearny Mesa plant to compare effectiveness of air pressurized and water pressurized spacesuits for underwater neutral-buoyancy simulation of the weightless environment in space.

Personnel from both Convair's life sciences Dept. 592-0 and the Air Force 6570th Aerospace Medical Research Laboratories at Wright-Patterson AFB, Ohio, provided test divers and support personnel.

Suits with the two different types of internal pressurization systems were checked in the series of dives for mobility, use in performance of manual-dexterity tasks, amount of energy expended by divers for each of the tasks, and time and equipment required to achieve simulated weightlessness in each.

The tests were conducted in Convair life sciences' underwater test facility, with biomonitoring data being recorded in the adjacent integrated manned systems simulator area. Underwater and time-lapse photography were used extensively for dexterity performance data recording.

Robert R. Brazell, manager of the test program and a Convair senior life sciences research engineer, said test data now is being correlated and analyzed.

"We are learning some interesting facts about response of man in different pressure and stress environments as a result of the biomonitoring data obtained," he said.

Lt. Col. John Simons, chief of the Flight Environments Branch, 6570th Aerospace Medical Research Laboratories, was present to observe the first tests in the three-week series.

Brazell and 1st Lt. Mike Moran, Air Force contract monitor, served as test subjects, using Gemini and Mark 4 spacesuits modified for air and water pressurization systems. W. G. Thomson of Convair served as test conductor.

T/Sgt. Roland Fancher and S/Sgt. Wayne Reffner, both from Wright-Patterson AFB, were safety divers and observers. Richard Wolf of Convair was equipment monitor and a safety diver.

C. M. Alderson, M.D., and W. M. Snowden, M.D., both Convair life sciences consultants, were medical monitors. Don Vorbeck, a Convair life sciences research engineer, handled biomonitoring data recording.

The underwater biomonitoring unit developed by the life sciences department recorded the test subjects' heart rate, respiration, carbon dioxide output, and body temperature during the tests. This information provided test data and also served to monitor safety of the test subjects.

Rosie the Riveter

Last of 'First Bomber Women' Would 'Do It All Over Again'

Forty women created quite a stir at Consolidated Aircraft Company's Plant 1 (now Convair's Lindbergh Field plant) on a sunny Monday morning Sept. 15, 1941.

They were the first women going to work on a bomber production line — and their initial success has been credited with "paving the way for women in industry." They were the forerunners for thousands of "Rosie the Riveters" employed during World War II.

Now, almost 28 years later, only one of the original group remains at Convair — Mrs. Ruby Dean, an electronics inspector in Dept. 143-3 at Kearny Mesa.

"My husband and brother-in-law were working for Consolidated and when word came the Company was thinking of putting women on the line, I applied."

After a few days of school and taking physicals, the 40 reported for work.

Uniforms were "order of the day" for the group — blue slacks, jackets and caps and yellow blouses and socks. Mrs. Dean is still convinced they were designed to keep the women from distracting the men — and that they accomplished their job!

"They were horrible looking, like gunny sacks," she recalls. Complaints from the group later led to the uniform being eliminated.

Mrs. Dean went on the production line working on PBYs and B-24s — laying out work, riveting, soldering, and doing subassemblies.

After the war, Mrs. Dean left the Company until 1947, when she returned to Convair on the electric bench at Lindbergh Field. In 1953, she was transferred to Air Force Plant 19. She moved to Kearny Mesa in 1963 where she now works on F-111 aerospace ground equipment.

Things are a bit different now. "In 1941, we made 50 cents an hour — but even at that rate I'd do it over again," she says. "I really enjoyed it."

A prized souvenir from her early days at Consolidated is a small trophy she received in 1944 in recognition of her pioneering role as one of the first women on the bomber production line.



LAST LEAF—Ruby Dean, last "Rosie the Riveter" left at Convair, holds memento of WWII days.

Tow Basin Manager Speaks to Students

W. B. Barkley, manager of hydrodynamics and towing basin facilities at the General Dynamics Marine Technology Center in San Diego, was a guest speaker at a "Of Man and the Sea" symposium for high school students Saturday, April 19, in San Clemente, Calif.

About 3,000 students from Capistrano Unified High School District attended the symposium. Barkley discussed testing of model marine vehicles at the basin. Several models and photographs of activities were exhibited.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Patents Issued on Six Concepts Developed by Convair Men

(Continued from Page 1)

edges" of spacecraft. It also can provide high-sensitivity vehicle attitude control, permitting rapid trajectory changes.

Both cooling and attitude control could be accomplished by an on-board computer that automatically would operate the system's regulator and valves to bring sensed conditions into conformity with programmed values.

This control concept has been wind tunnel tested by Convair at hypersonic speeds with encouraging results. It is currently being evaluated at low supersonic speeds by Convair at the U. S. Navy Ship Research and Development Center in Washington, D.C.

The patented concept for a small, light-weight heat exchanger was developed by Walter Egli and can be used in aircraft, spacecraft, and mobile equipment applications. It incorporates a rotating matrix with maximum heat-transfer surface ratio.

Earl L. Christian, a Dept. 491-0 senior manufacturing development engineer, developed the automatic frictionless guided welding apparatus.

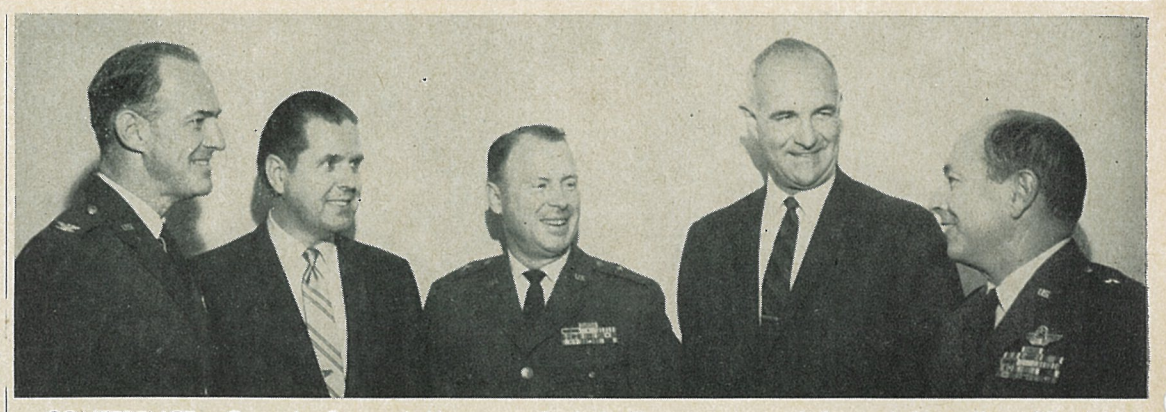
It includes an air bearing carriage support for the welding torch, enabling it to "float" in any horizontal direction as a magnetic drive moves it forward at uniform speed. An attachment causes the welding torch to "trace" an adjacent template of any shape or length.

The device provides a consistent weld depth and has been found especially effective for welding of extremely thin guage materials. The air bearing support also "damps out" vibration from surrounding factory equipment.

Identical machines have been built from Christian's drawings and used at Convair and Fort Worth divisions for welding materials in independent research and development programs.

J. D. Donaldson of Dept. 583-1 developed the standby automatic water-methanol system for multi-engine aircraft, now being used on Convair 600/640 aircraft converted to turbo-prop operation with Rolls-Royce engines.

The system provides water-methanol for one or more engines of a multi-engine aircraft when an engine fails. The water methanol increases power to compensate for loss in thrust.



CONFERENCE—Convair General Manager Jack L. Bowers, second from right, talks with visiting dignitaries before Atlas/Centaur Supplier Management Conference at Convair. Among visitors was former Convair vice president-launch vehicle programs Grant Hansen, second from left, now Assistant Secretary of the Air Force-Research and Development. From left are Col. Charles F. Merz, commander DCASPRO; Hansen; Brig. Gen. R. A. Duffy, director of research and development, Norton AFB; Bowers; Brig. Gen. L. L. Wilson, deputy director, SAMSO, Los Angeles.

VAdm. Hayward Among Speakers For Conference

VAdm. John T. Hayward, USN (ret.), a General Dynamics vice president and former president of the Naval War College, will be among featured speakers at a Convair Management Club-sponsored conference May 3 at the Kearny Mesa plant.

The six-hour conference will begin at 9 a.m. in the plant cafeteria and will be open to all employes and their wives and guests.

Hayward's presentation will be titled "A Look at General Dynamics from Inside and Out."

Dr. James George, assistant dean of the USC School of Business Administration, will speak on "Facing the Challenge of the MBA."

Dr. Charles Ringbakk of San Diego State will discuss "Organized Planning in 40 U.S. Corporations."

Mitch Brantley, district manager of Tymshare Corp., will demonstrate use of portable equipment for transmission and retrieval of information from a computer.

The conference will begin with showing of "The Medium is the Massage," an hour-long psychedelically-lighted filmed interview with Marshall McCluhan of the University of Toronto. It will end with a tour of the Kearny Mesa factory.

Bill Chana, Management Club president, said reservations for the conference should be made by phoning Helen Cook, ext. 3146 KM. Cost will be $1 for club members and wives and $2 for others, payable at the door. Dress will be casual. Plant entry will be through Gate 1.

Sea World Tickets For June 7-8 on Sale

General Dynamics Sea World days will be June 7 and 8 at the 50-acre oceanarium in Mission Bay.

Employes and families from Convair, Pomona, Stromberg DatagraphiX and Electronics-SD are eligible to attend.

Tickets will be available at reduced prices at all CRA outlets. Ticket prices are $1.75 for adults (a $1.25 savings) and 50 cents for children under 18 which represents a $1.50 savings for children 13-17 and a 50-cent savings for children 5-12.

Bids Being Accepted For 20 Typewriters

Twenty used typewriters are being offered for sale by Convair material sales in single lots on a sealed-bid basis.

Included are IBM and Remington electrics and Underwood, Royal, Remington and Smith Corona manuals. All may be inspected at the Lindbergh Field salvage yard.

Bid forms may be obtained through the Lindbergh Field or Kearny Mesa salvage yards. Bids will be opened at 1:30 p.m. May 6.

Sons, Daughters Win Fair Awards

Sons and daughters of General Dynamics families captured 41 awards at the 15th annual Greater San Diego Science Fair. A number received more than one.

John Winslow, son of Mr. and Mrs. Verner D. Winslow (he is in Dept. 566-2) won the senior division boys sweepstakes, one of the two top awards of the fair.

His entry was an experiment designed to explore the relationship between viruses and chemicals as a possible cause of cancer.

Young Winslow also won the first place senior medical sciences division award.

Other award winners included: Mark E. Dorian, Mike Eaton, John Eaton, Glen A. Evans, Patricia Gourley, Andy Sturman, Phyllis Brown, William W. Bryant, Karen and Curtis Fonseca, Roger Freedman, John Frelinger, Marcia Greensite, Chuck Greene, Patti Harrison, Thomas Herold and Kurt Ickler.

Also Dennis R. Isaac, David Lawhead, Charles Lewis, Kathy Lynch, Jim Nau, John Neu, Philip J. Riggan, Linda Stitt, Kyp Suzette Trepanier, Gary Richard Volk and George Wargo.

Free Skating Party Planned For Rink

CRA Ice Skating Club will sponsor a free ice skating party at San Diego's new House of Ice tomorrow (May 1) from 5:45-7:45 p.m., according to Bud Davies, commissioner.

The session is open to Convair employes, families and guests. There will be a 50-cent rental for those without skates.

The House of Ice is located at Mission Valley Freeway and Lake Murray Blvd. (70th Street) and boasts a 200 x 85-foot ice area.

The club will be sponsoring a year-round program at the new ice rink with private sessions each Thursday from 6:15-7:45 p.m. Previously sessions were held at the Mission Valley Ice Arena. Club membership is $1 a year. For further information, contact Davies at LF ext. 1856.

Suppliers' Day Planned at LF

Representatives from 20 material supplier firms will exhibit products Monday (May 5) at a Value Engineering Workshop Suppliers' Day, showing in the cafeteria at Convair division's Lindbergh Field plant.

Larry Richey, material department coordinator for the show, said castings, metal fasteners, sealants, coatings and similar products will be featured.

The products show will be open to all interested employes from 11 a.m. to 3:30 p.m. and will tie in with a two-week Value Engineering Workshop being conducted for selected division personnel by educational services Dept. 130-3.

The supplier firm representatives will be meeting with VE Workshop teams for discussion before the products show opens to the public.

Richey said Convair engineering, operations and purchasing personnel are especially encouraged to attend the show.

"Many recently developed and new state-of-the-art products will be on display," he said. "Seeing them and talking with the exhibitors will help keep our people up-to-date on latest materials and techniques available through these firms."

Chorus to Present Recital June 22

The General Dynamics Chorus will present a recital at Madison High School Auditorium from 3 to 5 p.m. June 22.

The event has been listed in the San Diego 200th Anniversary calender. There is no admission charge. The program will consist of choral music, barbershop quartet, men and women soloists and women duet.

Persons interested in joining the chorus may do so by attending rehearsals from 7:30 to 9 p.m. Wednesday at the CRA Clubhouse. For information call Jim Pate, ext. 1730 KM or Warren Hoover, ext. 1926 LF.

Tickets For Rodeo On Sale Through CRA

Tickets for 2 p.m. May 11 performance of the Pacific Indoor Rodeo at the San Diego International Sports Arena are now on sale at all CRA outlets.

One of the attractions will be a 1,600-pound Brahma bull leaping through a flaming hoop.

Ken Curtis, "Gunsmoke's" Festus Hagen, is among the entertainers.

Ticket prices are $3 for adults and $2 for children under 16.

Sea World Chosen For Fashion Show

The Industrial Recreation Council will have a Fashion Fantasy at 7:30 p.m. May 22 at Sea World.

Tickets will be $2.25. Fashions will be by Worth's and Graf's Furrier. They can be obtained by calling Pete Beyrer, 1111 KM.

The IRC will have it's 26th annual golf tourney May 3, 4, 10, and 11 at Torrey Pines golf course.

Brochure Explains Policy on Patents

Convair division's patent department has published a small brochure on patents for distribution to interested employes.

Neil F. Martin, patent counsel, said the brochure includes information on division and employe benefits from patents, types of innovations that can be patented, and Convair and federal patent procedures.

Copies can be obtained by calling the patent department, ext. 1231 KM.

Eleven Reach Scholar Finals

Eleven finalists — all high school seniors and sons or daughters of Convair employes — have been selected from 87 applicants to compete for four $500 Convair Management Club college scholarships.

Final judging is scheduled May 14 after each of the finalists have been interviewed by a panel of community representatives.

L. W. Turner, club scholarship manager, said the awards will be presented at the June 11 Management Club meeting at the Bahia Hotel.

Finalists and names and department numbers of their parents are:

Denise E. Botticelli, daughter of M. A. Botticelli, 545-4; Gail Campbell, daughter of G. F. Campbell Jr., 585-0; Allen J. Clark, son of M. R. Clark, 553-0; Roger A. Freedman, son of R. A. Freedman, 962-8; Mary Hagar, daughter of R. I. Hagar, 595-0; Robert A. Kaye, son of Dr. Samuel Kaye, 596-0.

Holly E. Kossyta, daughter of F. J. Kossyta, 142-1; Robert F. Nau, son of R. A. Nau, 581-5; Deborah Simmons, daughter of D. W. Simmons, 512-1; Karen S. Wadleigh, daughter of G. E. Wadleigh, 966-9; Carol E. Wright, daughter of Mrs. Miriam Newnum, 143-3.

Initial screening of applications was handled by the Management Club scholarship committee. Members, in addition to Turner, were S. E. Hartzler, L. B. Gilmore, S. T. Krebs, and H. E. Seibert.

Water Skiers Plan Colorado River Trip

The Convair Don Diego ski club will have a water ski trip to Buckskin Point on the Colorado River May 16-18.

Sign up deadline is May 6 at the monthly meeting at the South Bay-Mission Bay clubhouse, 3866 Ingraham St., Pacific Beach.

Trip leader is Harry Eastman, 274-4982.

The club will also have the Convair-Don Diego open race May 4 at Mammoth Mountain ski area.

VOLUNTEERS SOUGHT TO PACK GIFT PACS

Volunteers are needed to help pack Gift Pacs for servicemen in Viet Nam and to type related name and address labels.

Packing of the Pacs is done at 831 Sixth Ave. from 9 a.m. to 5 p.m. weekdays and week nights by prior arrangement. Phone Marthana Guglielmo, 278-7306, for details.

Top Suppliers Confer in SD

More than 50 top aerospace and aerospace supplier executives were at Convair April 18 for a one-day supplier management conference.

Headlining the program was Grant L. Hansen, Assistant Secretary of the Air Force for Research and Development; Brig. Gen. Louis L. Wilson Jr., deputy director, SAMSO; Dr. Sy Himmel, assistant director for launch vehicles, NASA-Lewis.

Purpose of the conference was to emphasize the important contributions of aerospace suppliers and reliable products in the continuing success of the Atlas and Centaur launch vehicles.

To date, 375 Atlas bosters have been launched. When used as a space booster it has a record of 122 successes in 138 missions including 46 consecutive successes.

The Centaur upper stage has a record of 10 successes in 11 missions flown as the upper stage of an Atlas.

The suppliers were welcomed by Jack L. Bowers, Convair general manager. Besides Hansen, Wilson and Himmel, speakers were R. W. Keehn, Atlas program manager; D. L. Fagen, operations manager; L. I. Medlock, director of reliability control; G. W. Zahrte, manager, general procurement; Richard Randall, manager, product assurance, Aerospace Corp.

Pistol Team Fires In National Match

Convair Pistol Team competed April 20 in the nation wide NRA-NIRA pistol matches. Scores and targets for various teams are mailed to judges to determine winners.

Winners and scores in CRA Pistol Club matches April 13 are: Masters—Charlie Kropp 289-12x, Don O'Brien 283-7x, second; Expert—Dick Sutton 282-7x, and Cris Hinderson 278-8x, second; Short National — Jim Halfacre, Harry Black, second, O'Brien, third and Hinderson, fourth; Sharpshooter (new category for novice shooters) — Ellen Henderson 236-1x, Bud Robinson 215-7x, second.

Second quarter pistol team is: Halfacre, O'Brien, Roland Schneider and Warren Walker.

Next shoot is May 11 at 9:15 a.m. at Police Pistol Range.

Softball Managers Will Meet May 1

A meeting for managers of all plant fast-pitch and slow-pitch softball teams has been scheduled for 7 p.m. May 1 at the CRA Clubhouse at Kearny Mesa.

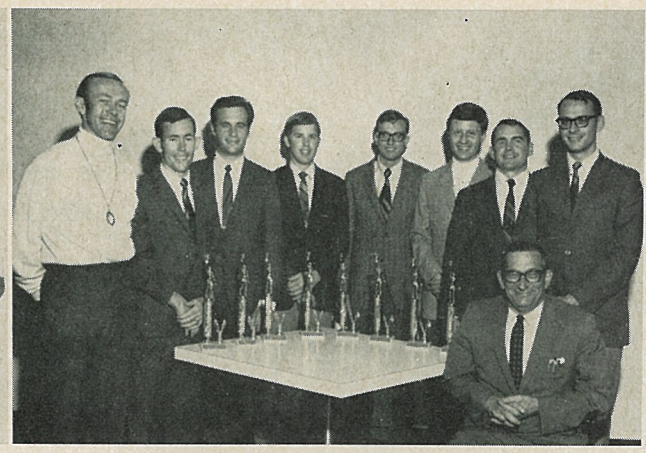
Pete Beyrer of the CRA staff said eligibility rules and playing schedules will be discussed.

The softball field at Kearny Mesa has been renovated and is now available for team workouts. Use of the field can be scheduled by phoning Beyrer, ext. 1111 KM.

COINEERS TO VOTE MTG. PLACE CHANGE

Convair Coineers will hold a meeting Monday May 12 in CRA Auditorium to vote on a change of meeting place. All paid up members are urged to attend and cast their votes.







HOOP CHAMPS—Winning teams in plant basketball fast-break, slow-break and swing-shift leagues received trophies at April 17 awards dinner. Underdogs (left photo) took slow-break championship. From left are, standing, Dick Bjelland, Bob Bachman, Jim Held; seated, Roger Midura (manager), Bruce Farr. Eric Wong and Don Kunze were not present. Machine shop (right photo) was swing-shift winner. From left are Dave Shine, Herman Jones (manager), Doug Veling, Jim Wilson, Alvin Jordan, Rich Shepard. Joe Ceasar was not present. Underbrush (center photo) won fast-break championships. From left are Ron Eckberg (coach), Terry Dougherty, Pete Mihelich, Nord Hjerleid, Paul Crandell, Jack Micrzwa, Phil Hanna, Ron Lohrback. Seated is Pete Beyrer of CRA staff.

Speedy

Girl Drivers Best for '68

Women drivers are notorious for stopping traffic but when Jackie Jeans and Judy Thomas stop traffic, cars have nothing to do with it.

When they get into a car, it moves, and they have the trophies to prove it.

In 1968 the girls won the San Diego Council of Sports Car Clubs trophies for slaloming in the D/EW class (Jackie) and the HW class (Judy).

Jackie, a repro-typist in Dept. 524-2 did her racing in a Triumph TR-3 while Judy, a secretary in Dept. 053-0, drove a Morris Cooper Mini.

Slaloming, an ASEBRING event, consists of driving as fast as possible around a closed course comprised of turns, straights and jags termed chicanes outlined with pylons or cones.

In order to qualify for trophies, the girls not only had to beat all the women in their class but, because of the shortage of women drivers, had to better the times of at least half the men in the same class.

For Judy, the championship was a highlight of her first year in racing. Jackie, a mother of four, has been racing four years and also won the championship in her class in 1967.

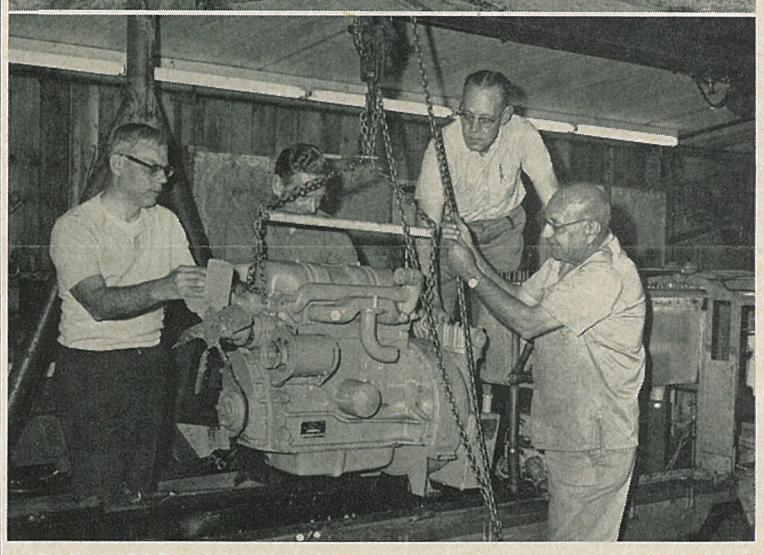




TROPHY WINNERS — Jackie Jeans, left, Dept. 524-2 and Judy Thomas, Dept. 053-0, hold trophies they won from San Diego Council of Sports Car Clubs for being best ASEBRING drivers in their class in 1968.

Sports & Recreation





RAIL IMPROVEMENTS—CRA Railroad Club members (top photo from left) G. G. Shipman, Al Kent (club commissioner), Don Dwyer and Keith Bennett labor over new track beds while (lower photo from left) clubbers Charlie Sack, Dirk Mous, Kent and Leo Heyob prepare to install new Ford Diesel power plant in club's one-quarter-scale train.

'Convair Cannonball' Volunteers Laying New Railroad Track Beds

CRA Railroad Club members are feeling a little like the "empire builders" of our 19th century railway heyday as they labor over new track beds for the "Convair Cannonball" one - quarter - scale train.

Working totally from volunteer help, they still have a long way to go before completion. "We are going to need all the extra help we can get," said Keith Bennett.

Work started when it was found that existing "ballast" under the track areas was binding tracks and preventing expansion or proper drainage. Volunteers are replacing decomposed granite "ballast" with pea-sized crushed rock.

"Estimated completion time is the last of May right now but with some good volunteer help we could push that date up considerably," said Al Kent, commissioner. He may be contacted at ext. 3314 KM or CRA Missile Park railroad areas on weekends.

When the "Cannonball" does roll again it will be powered by a newly purchased Ford 172 Diesel engine.

Convair Missile Park at KM Will Open Officially May 3

The Convair Missile Park at Kearny Mesa will be officially open May 3. All Convair, Electornics-SD and Stromberg DatagraphiX employes and their dependents are eligible to use the park.

The merry-go-round will be in operation and the snack bar will be open to serve hamburgers, hot dogs, cold beer and soft drinks. However, the train will not be in operation for a few more weeks.

Horseshoes, shuffleboard, volleyball, table tennis and softball facilities are available.

Visitors should park their cars in the big lot south of the recreation area and enter by way of the overpass. A Convair guard will be stationed at the overpass. Employes are urged to have some kind of identification for admittance.

Departments wishing to schedule picnics may contact Pete Beyrer, ext. 1111 KM.

It's Three Titles in Row For Underbrush Team

Underbrush won its third consecutive championship in Convair fast-break basketball league play by defeating the 595 squad, 50-45, in the last game of the season.

Coached by Ron Eckberg, Underbrush also had won first-half honors by edging 595 in a playoff game, 53-45.

Underdogs, coached by Roger Midura, were undefeated in both first and second-half season play in the plant slow-break league.

Machine shop, coached by Herman Jones, defeated tool planners, 32-20, in the last of a five-game series to take the swing-shift championship.

Final scores in the first four swing-shift games were close with machine shop winning two, 39-37 and 35-33, and tool planners taking two, 35-32 and 33-29.

Following are team standings:

FAST-BREAK LEAGUE

Team	Won	Lost
Underbrush	6	0
595	5	1
Cosmo Bums	4	2
Aero	3	3
Plastics	2	4
Electronics-SD Bombers	1	5
Flight Control	0	6

SLOW-BREAK LEAGUE

Team	Won	Lost
Underdogs	7	0
Spoilers	6	1
Stromberg DatagraphiX	4	3
Electronics-SD Dirty Dozen	3	4
Stromberg Supporters	3	4
GASP	2	5
Patton's Pros	2	5
Plant 1 Bullets	1	6

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is May 6. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS—Meeting May 1, 7:30 p.m., Lindbergh Field cafeteria. Tour of FAA facilities following the meeting.

BOWLING—Summer leagues now forming.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m.

CHORUS—Rehearsals 7:30 p.m. Wednesdays. Concert at Madison High School, June 22, 3-5 p.m.

COINEERS—Meeting May 12, 8 p.m.

DELTA DIVERS—Meeting May 14, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting May 7, 7:30 p.m., Floral Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Friday; 10 a.m. to 5 p.m. Saturdays.

ICE SKATING—Free GD family skate night Thursday, May 1, 5:45 to 7:45 p.m., House of Ice, Highway 80 (Interstate 8) and Lake Murray Blvd.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

MISSILE PARK—Officially opens May 3.

PISTOL CLUB—Shoot May 11, 9:15 a.m., San Diego Police Pistol Range.

RADIO CLUB—Meeting May 8, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting May 14, 7:30 p.m. Horseback riding lessons offered starting May 25 at Bob Bradley's Stables in Bonita.

RIFLE CLUB—Senior shoot May 14, 7:30 p.m., Junior Shoot, May 3, 1 p.m., Gillespie Field Range.

ROCKHOUNDS—Meeting May 14, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting May 6, 8 p.m., South Bay Club. Mammoth Mountain races May 2-4. Ski trip to Buckskin Point, Arizona, May 16-18.

SOFTBALL—Summer teams now forming.

SPORTS CAR CLUB—Meeting May 14, 7:30 p.m. Convair executive dining room, Lindbergh Field.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting May 8, 7 p.m.

TABLE TENNIS—Friday night league now forming. Play Saturdays 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS—16-day Caribbean Carousel, July 19-Aug. 3.

TRAIL BIKE CLUB—Organizational meeting, May 2, 7 p.m.

TRAILERS—Meeting May 6, 7:30 p.m.

TROPICAL FISH—Meeting and workshop Mondays, 7:30 p.m.

WIVES—New members tea, May 28, 10 a.m.

WOMENS GOLF—Tournament May 10, 10:30 a.m., Rancho Bernardo Country Club.

Summer Bowl Action Nears

CRA Summer Bowling League is slated to kick off the week of May 12-16 at five area alleys, according to commissioners Jim Hayman and Mike Brooks.

Alleys, teams and coordinators are: Clairemont Bowl—Tuesdays, mixed foursomes, Gladys Renaud KM ext. 2729; Parkway Bowl — Tuesdays, Management Club league, Don Evanson KM ext. 3213; Frontier Lanes — Thursdays, Electronics-SD league, mixed quintets, Hank Honcher LF ext. 1391; Pacific Beach Bowl — Thursdays, mixed foursomes, Sam Catalano KM ext. 1370; Pacific Recreation — Fridays, mixed trios, Brooks 469-8793 after 4 p.m. All games start at 6:30 p.m.

Contact coordinators to sign-up for play. For general information call Hayman LF ext. 1157.

Bike Club to Organize Under CRA Sponsor

There will be an organizational meeting for a CRA trail bike club at 7 p.m. May 2 at the CRA clubhouse.

This is a club for small motors only, not more than 175 cc or motors not large enough to travel on freeways. The club is open to all Convair, Electronics-SD and Stromberg DatagraphiX employes and dependents.

Flyers Plan Tour Of Airport Tower

The Bonair Flyers will tour the San Diego International Airport FAA facilities, including the tower and weather bureau May 1.

The tour will begin after the regular meeting which will be at 7:30 p.m. at Convair's Lindbergh Field cafeteria.

Table Tennis Loop To Compete Fridays

CRA is planning a table tennis league to compete Friday nights in the CRA clubhouse.

The league will be composed of four-man teams. Each member of each team will play four matches a night.

Individual trophies will be given to the winning team members. Interested parties may call Pete Beyrer, 1111 KM.



MEDICAL CONFERENCE—A one-day medical conference for 12 General Dynamics physicians was held in Fort Worth recently. Pictured seated left to right, are Dr. Jack Leverett, chief physician, Fort Worth; Dr. A. D. MacDougall, Electric Boat, Groton; Dr. J. E. Hall, Quincy division; Dr. J. J. Dinan, Canadair, Ltd.; Dr. A. L. Strasser, Electronics, Rochester; standing, left to right, Frank Paschal, health physics administrator, Fort Worth; Edwin C. McManus, Corporate director of employe services; Dr. John P. McCann, Corporate director of health and safety; Fred C. Chambers, director of industrial relations, Fort Worth; M. C. Curtis, vice president-operations, Fort Worth; Dr. John Morton, Stromberg-Carlson, Rochester; Dr. John Miller, Stromberg-Carlson, Ardmore; Dr. Lawrence Marinelli, Pomona.

Corporate Medical Policies Reviewed As Physicians Meet in Fort Worth

Twelve General Dynamics physicians convened in Fort Worth April 21 before attending an American Industrial Health Conference in Houston.

The one-day conference was the first such meeting held at the Fort Worth plant. M. C. Curtis, vice president-operations, welcomed the group.

Dr. John P. McCann, director of health and safety for General Dynamics, reviewed the Corporate medical programs and operations, and Edwin C. McManus, director of employe services for General Dynamics, discussed accident and sickness claims control.

Other speakers at the conference included Dr. John Morton, medical director of Stromberg-Carlson; Dr. Lawrence Marinelli, medical director of Pomona division; Dr. Alex L. Strasser, medical director of Electronics division; Dr. J. L. Judson, aerospace medicine, Fort Worth division; and Dr. Jack K. Leverett, chief physician of Fort Worth division.

Dr. Leverett discussed the planning and design of an in-plant medical facility preceding a tour of the area. Dr. Judson presented an F-111 progress report, film and review.

Other physicians attending were Dr. John Miller, Stromberg-Carlson, Ardmore; Dr. J. J. Dinan, Canadair Ltd.; Dr. A. D. MacDougall, Electric Boat, Groton; Dr. G. M. Clarke, Convair; Dr. J. E. Hall, Quincy; Dr. Ted Lace, Fort Worth division.

Benefits For Salaried Described in Detail In Individual Reports

Individual "Benefacts" reports are being mailed this week to salaried employes at Convair, Pomona and Fort Worth divisions.

The confidential reports follow the same four-fold-form format as those distributed for the first time last year and summarize current Company benefits for the individual employe and projections of those benefits through the individual's normal retirement date.

A message from the general manager or president of the employe's division is included with each.

Figures for General Dynamics' Savings and Stock Investment Plan participation is based on the individual's plan status on Jan. 2, 1969. Thus, members who received short-term distribution of first-plan-year savings, Company contributions, and earnings will have that reflected in their reports.

Computation of all other current benefits and projections was based on Dec. 31, 1968, benefit programs status.

The "Benefacts" reports, designed to aid employes in future family and retirement planning, were prepared by Benefacts Inc. of Baltimore, Md., from computerized data provided by the divisions and Social Security and other computer projections.

Each individual report will include information on:

1. Hospital and medical benefits — including basic plan hospital room and board, other hospital charge, out-of-hospital, and surgical benefits, and major medical plan coverage and lifetime maximum benefits as of Dec. 31, 1968.

2. Disability benefits — calculated on combination group insurance, retirement, Social Security, and sick-leave benefits.

3. Death benefits — from life insurance, savings and stock investment and retirement plans and Social Security. Accidental death benefits and monthly income from Social Security for surviving spouse and dependent children also are given.

4. Normal retirement benefits —from the retirement plan and Social Security.

5. Savings and Stock Investment Plan — itemized by amount contributed by the employe, amount contributed by General Dynamics, current value, and projected value on normal retirement date.

Savings and Stock Investment Plan projections assume that the employe will continue contributions at his present rate without withdrawals.

Don Kidder Named Director For GD European Operations

General Dynamics International has announced the appointment of Donald E. Kidder as director of European operations and of Gen. Norman Wilson-Smith as managing director of General Dynamics Ltd. and manager of Canadair Services Ltd.

Headquarters for General Dynamics International in Europe is in Brussels, Belgium, and has offices in London and Bonn. Wilson-Smith will have offices in London and reports to Kidder.

Kidder has been director of long-range planning and marketing for Electric Boat division in Groton, Conn., since 1967. He joined GD in 1963 as director of new product development and became assistant to the president of Electric Boat division in 1965.

After U. S. Navy submarine service in World War II, he spent 18 years with Ford Motor Co., Chrysler Corp., and as vice president of Studebaker Corp.

Wilson-Smith recently retired from the Canadian armed forces where he was deputy chief of staff for force development. He previously served as Canadian military attache in Washington.

His military service included World War II and Korean War duties and NATO and UN assignments in Cyprus. His staff appointments were mainly in the field of combat development and future equipment requirements. He is both a fixed-wing and rotary-wing pilot.

Openings Reported In Mixed Bowling

There are still openings for bowlers in the GD/E Handicap Mixed Bowling League which will play at 6:15 p.m. Thursday nights at Frontier Bowling lanes. League play starts May 8.

Those interested may call Hank Honcher 1391 LF or Carolyn Ruscilli 1457 KM.

Toastmasters Slate Special Program

The Convair Toastmaster Club will present a special program for all employes at 4:30 p.m. May 7 at the CRA clubhouse.

There will be a discussion, question and answer period on the Toastmasters, followed by refreshments.

Ilene Wilson's 64 Wins Golf Tourney

General Dynamics Women's Golf Club linkswoman Ilene Wilson shot a net 64 to become "Champ of Champs" during the annual tournament at Singing Hills Pine Glen course April 12.

Ilene also shared top honors with Flo Kell in "Points Up Par" tourney of the day.

Next scheduled tournament is May 10 at Rancho Bernardo Country Club. The 18-hole match tees off at 10:30 a.m. for all club members, Convair women employes and dependents. For information contact Freda Magargal at KM ext. 2933.

Horseback Riding Lessons Scheduled

CRA Riding Club will sponsor a series of horseback riding lessons beginning May 25 for Convair employes and their families, announced Steve Berry, commissioner.

Classes are slated for Bob Bradley's Stables in Bonita and will be on a limited first come first served basis with a reservation deadline of May 16. Cost is $20 plus $2 insurance fee. Class director is Len Sidock KM ext. 1846.

General Dynamics Ad Campaign to Commence

Bulletin boards at all General Dynamics locations soon will carry the first reprints of a new Corporate national advertising program schedule to begin in mid-May in major news, business, trade and general publications.

President Roger Lewis said that the objective of the program is to show General Dynamics' demonstrated excellence in technologies from the bottom of the sea to outer space, and to display the diversity of the Corporation's operations across a spectrum of growth industries.

The program will emphasize General Dynamics' long-standing ability to respond to the nation's requirements for advanced weapons systems and a unique capability for capitalizing on opportunities in non-military applications of aerospace, electronics, marine and resources technologies.

The advertising will be directed primarily at the federal government community that is General Dynamics' prime customer, the financial institutions that help provide the Corporation with working capital and advise private investors, and the aerospace companies which are customers as well as competitors.

Two complementary advertising campaigns are under way to reach this audience. One will start in May and run monthly in Fortune, Forbes, Business Week, U. S. News and World Report, Newsweek, Time, Scientific American and the New York, Washington, Chicago and Los Angeles area editions of Life. A different, four-color, two-page advertisement will be placed monthly.

These advertisements will feature such subjects as Electric Boat research and work submarines, Stromberg-Carlson's telecommunication system for the Independent Telephone Industry, Canadair's CL-215 amphibian water bomber, Stromberg DatagraphiX computer - to - microfilm systems, Convair's ocean data stations, Pomona Navajo project, the Resources Group's land reclamation work, Fort Worth's application of new high-strength, lightweight materials to aircraft production, Quincy's barge-carrying transports and Electronics' Apollo Instrumentation Ships.

The second campaign will start later in the year in trade and professional publications. It is designed specifically to reach engineering oriented customer personnel in the military and space agencies and the aerospace industry. The advertising message will describe General Dynamics as a corporation working at the forefront of diverse and critically important technologies.

Advertising will directly support specific marketing objectives of General Dynamics divisions and subsidiaries. Subjects will be drawn from important company-funded and customer - supported development work, such as space erectable antennas, hydroacoustics, radome design, advance composite materials, reusable maneuverable re-entry vehicles and cryogenic fuels.

The advertisements are slated to run in publications that have wide national readership among technical management. Publications under consideration include Aviation Week, Electronics, Astronautics and Aeronautics, Space Aeronautics, U. S. Naval Institute Proceedings and Ordnance, among others.

To keep General Dynamics employes abreast of the new program all new advertisements will be posted every month at company locations prior to publication.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.



CONTROLLERS CONFERENCE—Division controllers met April 14-16 at Fort Worth division. Attending were, from left (standing) R. P. White, Fort Worth; J. McMurtrey, Freeman Coal; M. Egol, Arthur Andersen and Co.; O. D. Center, Stromberg-Carlson; C. L. Massey, Corporate Headquarters; S. S. Gregory, Material Service; P. W. Wiedenmann, Corporate Headquarters; J. B. Hunter, Canadair; E. E. Hatchett, Fort Worth; J. D. Eiland, Pomona; H. E. Wall, Quincy; J. C. Ruggier Jr., Arthur Andersen and Co.; J. P. Ross, Corporate Headquarters; G. B. Stephan, Electronics; J. D. Milling, Convair; J. T. Murray, Marblehead Lime; T. L. McPherson, Electric Boat; (seated) J. R. Blattenberger, Stromberg DatagraphiX, and, from Corporate Headquarters, R. R. Brewton, E. J. Tucker, D. L. Thomas, J. A. Sargent, H. K. Pedersen. Controllers meet periodically at different General Dynamics divisions.

Increased Participation in Bonds Buying by Deduction Stressed

The 1969 U. S. Savings Bonds Drive will begin at Convair Monday, May 19 and run through May 29.

The campaign emphasis will be on employe participation, regardless of amount invested.

M. V. Wisdom, director of industrial relations said the division goal will be to sign up all employes who are not now participating in bonds buying by payroll deduction. In addition, those employes currently participating will be asked to increase their investment.

Paul Allgire, supervisor of employe benefits, is directing the campaign. He stressed that employes may sign up for as little as 50 cents a week through payroll deduction.

Employes may order Series E Bonds, which pay 4¼ per cent interest if held to maturity in seven years and they can also order Freedom Shares offered in combination with Series E Bonds on a one-for-one basis. Freedom Shares pay 5 per cent if held to maturity at 4½ years.

During the campaign departmental coordinators, under the direction of Del Dimmitt, Convair fire chief and drive coordinator, will pass out punch cards to employes with which they can sign up for the program.

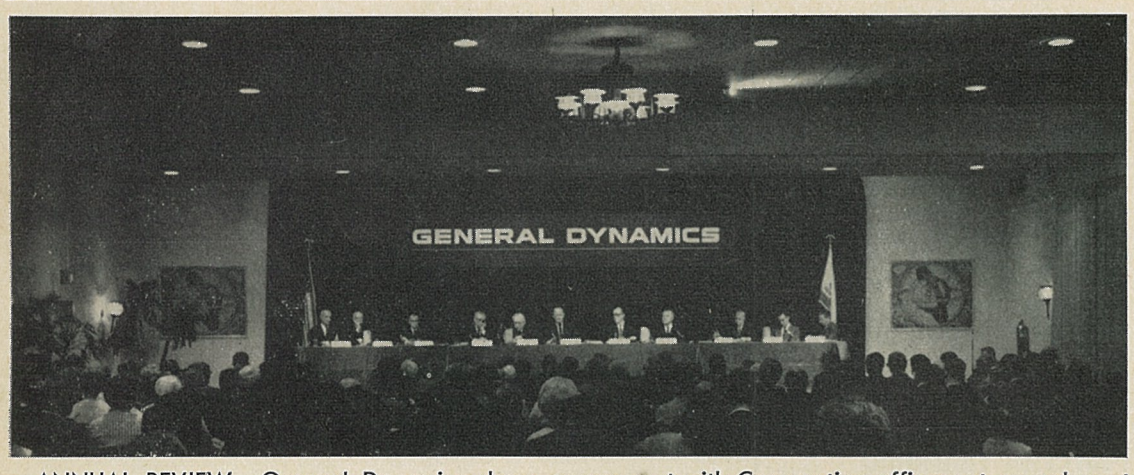
Departmental coordinators are:

Bill Ochodnicky and Gil Peyton, engineering; Del Dimmitt and Paul Veal, industrial relations; John DeBlanc, legal, contracts, marketing, communication and new product development; Frank Robbins and Bob Bruce, operations; W. G. Evans and J. M. (Duke) Rogers, material; F. M. Wynkoop, finance; Fred Lee and L. C. Stuckey, quality control; Paul Green, launch vehicle programs; AF Plant 19, Bob Bruce; Eastern Test Range, Ken Newton and Jay Freeman; Western Test Range, Roger Lynch and Marv Tooley.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 10 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 14, 1969



ANNUAL REVIEW—General Dynamics share owners met with Corporation officers at annual meeting April 30 in San Diego. Roger Lewis, president, discussed "state of Corporation" and directors were re-elected for coming year.



EARLY INTEREST—John Nowell, 2½, son of General Dynamics share owner Jack Nowell of La Mesa, Calif., is intrigued by Canadair Ltd. aircraft displays (that's CL-215 in background) at annual meeting of Corporation. Senior Nowell owned Electric Boat stock when he was age 2!

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—I sent the State a check for my taxes and, believe me, it bruised my finances. Isn't there some way Convair can withhold a small amount each week to cover the tax?

A—No, but there are several ways you can. One is to use the Industrial Allotment Plan under which Convair will deduct the sum requested from your checks and deposit it in a savings account at one of three banks (whichever you choose). Another is to purchase Savings Bonds through payroll deduction.

★ ★ ★

Q—I saw some people from Ryan and Gulf General Atomic at our Disneyland family night. How come?

A—Convair Management Club extended some tickets to clubs of other local companies, including Ryan. When General Atomic and Liquid Carbonic were General Dynamics divisions, they helped administer the program and shared in the financial risk and, as a courtesy, receive a small block of tickets for employes. Tickets sent outside of General Dynamics amounted to less than five per

(Continued on Page 4)

OAO Goes on Alert For Star Flare Up

The Orbiting Astronomical Observatory (OAO-2), sent into orbit Dec. 7 by Atlas-Centaur 16 (GD/NEWS Dec. 18, 1968), is participating in a two week alert of astronomers who hope to witness the flare up of a celestial object called an X-ray star.

Astronomers hope that the star, Scorpii X-1, may flare up in the period from May 9 to 23. If it does, instruments on the OAO will be turned on the star.

There is speculation that Scorpii X-1 may be the remnants of a nova or exploding star.

Electronics-SD Club To Hear Rep. Wilson

Rep. Bob Wilson (R-San Diego) will discuss the House Armed Services Committee and its role in government and industry at an Electronics-SD Management Club meeting Friday (May 16) at Peter's Hofbrau in Point Loma.

Tickets are on sale at $4.50 each through club boosters. Social hour begins at 5:30 p.m. with a special German menu to be served at 6:30.

Wilson has been a member of Congress since 1952 and chairman of the National Republican Congressional Committee since 1961.

Roger Lewis Reports For Share Owners

General Dynamics' annual meeting of share owners was held in San Diego April 30, highlighted by remarks from Roger Lewis, president.

Although reporting that first-quarter (1969) net income of $7,482,000 was down from $12,450,000 for the same period in 1968, due primarily to continuing difficulties in marine operations, Lewis voiced confidence in the future. In his summation, he said:

"We have major programs and are competing vigorously for new ones in aerospace, electronics, and marine systems . . . We have a solid base in commercial business and we expect it to grow.

"The environment in which we operate is constantly changing . . . (Here he called attention to increasing pressures on profitability in defense contracts, with the government writing tighter contracts in an atmosphere of keener and keener competition.)

"It is at times like these that there is a premium placed on an organization that is technically oriented, that has experience in meeting the needs of its customers, and that has a demonstrated record of producing large systems efficiently and promptly.

"Because that definition describes General Dynamics, we face the future with confidence."

Lewis' report to the share owners included an overview of work being accomplished by General Dynamics operating units. Following are a few highlights:

AEROSPACE

Fort Worth division has orders for 493 F-111 aircraft, including 24 F-111Cs for Australia. Funds are being sought by the Defense Department for 60 additional F-111Ds for 1970 to 1975.

Canadair is beginning delivery to France of 10 CL-215 twin-engine amphibious planes, which can drop six-ton water loads on forest fires, and has orders for 20 others from the province of Quebec. Canadair also is building three tilt-wing CX-84 aircraft for the Canadian armed forces.

Convair is building DC-10 fuselages for McDonnell Douglas, C-5 empennages (tail sections) for Lockheed-Georgia, and is now in final competition for a contract to build a Navy S-3A anti-submarine-warfare carrier-based aircraft. Atlas-Centaur launch vehicles are scheduled for use in future Mariner-Mars and COMSAT communications satellite launches.

Pomona division has been working on contract definition studies for the Advanced Surface Missile System (ASMS), scheduled to be the fleet air defense system of the mid-1970s, and is continuing production of Redeye, Standard Missile, and Standard ARM (anti-radiation missile) systems.

MARINE ACTIVITIES

Electric Boat division has 13 new nuclear attack submarines under construction and 14 others are scheduled for major overhaul or conversion.

NR-1, first nuclear-powered research submarine, and the Narwhal attack submarine, both reflecting important technical advances, were completed last year. Bids have been submitted on two additional attack subs and design is under way on a turbine-electric-drive or "quiet" sub.

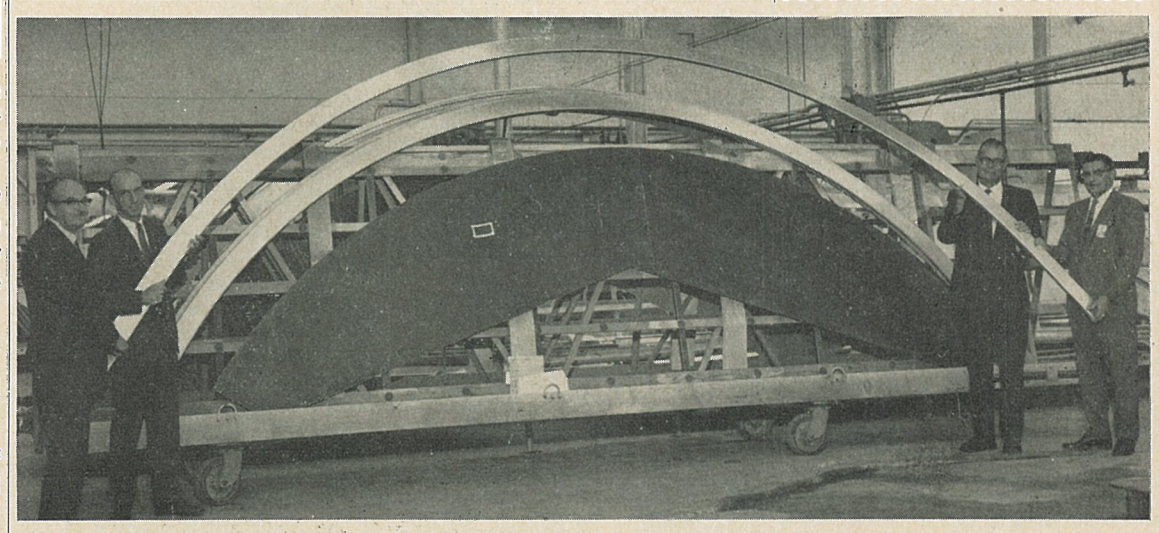
The Company has under construction or contract 12 large surface vessels — six fleet replenishment oilers, two sub-tenders, and four landing ships at Quincy division. A contract was received last year for the first

(Continued on Page 2)

'Sea World Days' Tickets On Sale

Tickets for the General Dynamics Sea World Days June 7 and 8 are on sale at all CRA outlets.

The reduced price tickets are $1.75 for adults (a $1.25 saving) and 50 cents for children (a $1.50 saving for children 13-17 and a 50 cent saving for children 5-12.



MILESTONE—First major DC-10 part completed at Convair, one-third of a fuselage frame section, is shown after being heat treated and stretched on press. Holding frame section, from left, are Ed Robinson, manufacturing manager for program; Jack Hurt, DC-10 program manager; Gerry Cox, sheet metal department general foreman; Frank Blair, Lindbergh Field factory manager.

Roger Lewis Reports For Share Owners

(Continued from Page 1)

commercial vessels to be constructed at Quincy—three 857-foot cargo transports for Lykes Brothers Steamship Lines. Proposals are in for the DD-963 destroyer competition, with award expected in the fall.

ELECTRONICS

Electronics division, Stromberg-Carlson, and Stromberg DatagraphiX are engaged in a variety of programs for the armed services, NASA, and commercial customers.

Electronics division's on-going programs include tactical radio, space communications, radar and sonar, digital data handling, test equipment, and avionics.

Stromberg-Carlson is serving continued growth in the independent telephone industry and is progressing in electronic switching — a technology expected to dominate that industry in the next decade.

Stromberg DatagraphiX has been established as a wholly-owned subsidiary to better serve markets for computer input and output systems. More than 150 computer-to-microfilm systems have been installed for diversified business establishments. They employ a unique method of data to alphanumerics at speeds to 90,000 characters per second and photographing it instantly onto microfilm. These systems generate readable information 15 times faster than conventional computer printers at a fraction of the cost.

RESOURCES

A good year was recorded in building material and lime production and volume of aggregate sales for highways and other construction reached a record level. New aggregate resources have been secured in the Chicago area.

Coal production has been down recently because of natural causes but Orient #6, a deep mine in Southern Illinois, is on schedule in limited production and is designed to produce three million tons of coal a year.

Mgt. Club to Sponsor Caliente Day June 15

Convair Management Club will sponsor a "Day at the Races" at Caliente on June 15.

Reduced price tickets are available at all club booster outlets.

Log Book Entries

Awards

CONVAIR

Employe Suggestion awards approved for the week ending April 25.

Dept. 027, D. E. Allman, $15; 566, J. J. Arnieri, $665.50; 401, H. B. Bishop, $15; 059, R. K. Bond, $33.40; 401, D. R. Boyle, $15; 015, A. J. Capuccini, $15; 954, R. L. Creamer, $68; 142, W. A. Dershem, $30; 059, R. L. Dixon, $15; 985, C. M. Flores, $20.80; 519, C. Greve Jr., $130.50 (two awards); 454, T. P. Hard, $30; 149, D. W. Harger, $85.30; 519 V. Haydel, $56.60; 001, D. E. Howard, C. E. Scott, G. W. Weide, $10 each (joint award); 001, E. H. Hussong, W. A. Swanson, $28.50 each (joint award); 027, J. G. Keller, $34.60.

Dept. 401, E. Leep, J. Woodhead, $62.70 each (joint award); 015, H. J. Mass, $15; 015, A. E. McFarland, $123.80; 454, J. A. Nagi, $25; 985, V. A. Newcomb, $29; 027, D. R. Noon, $15; 019, J. E. Oliver, $15; 143, L. Ortiz, $18.60; 731, T. M. Parmarter, $15; 143, G. A. Rummel, $49; 001, M. J. Russell, $15; 015, W. F. Sager, $15; 130, T. A. Stamper, $54.30; 985, P. H. Stephens, $19.90; 733, E. L. Syrios, $15.90; 250, F. Tellez, $143.10; 015, L. M. Therrien, $30 (two awards); 141, M. E. Walker, $15; 027, R. L. Wilder, $15; 833, M. M. Wood, $44.30.

Employe Suggestion awards approved for the week ending May 2.

Dept. 780, J. L. Alexander, $97.90; 020, V. H. Ammons, $244.80; 059, T. Anderson, $15; 250, H. C. Armstrong, $57.60; 507, E. C. Beach, R. L. Black, $36.70 each (joint award); 831, R. D. Behlman, $15; 401, A. L. Bishop Jr., $32.80; 015, J. J. Blekkink, $15; 517, J. R. Clinger, $102.30; 780, N. S. Cole, $41.30; 149, P. Contreras, $229.35; 016, B. C. Davis, $138.90; 761, R. A. Deutschman, $15; 059, R. L. Dixon, $168.50; 027, S. D. Engebretson, J. H. Parsons, $67.40 each (joint award); 149, H. Gaines, $229.35; D. R. Gauss, $15; 049, J. A. Gliebe, $15; 401, R. A. Golem, $15; 027, C. F. Hagata, $413.20 (two awards); 401, D. J. Harms, $16.35; 059, G. Henderson, $660.10.

Dept. 027, J. R. Hovland, $74.30; 250, P. O. Jones, $172.70; 780, K. S. Lake, $229.40; 401, R. T. Lewis, $16.35; 574, S. J. Martin, $51.60; 144, J. Medlock, $39; 019, L. A. Moll, $15; 511, L. M. Moore, $15; 146, M. R. Olson, $60.60; 250, H. E. O'Neil, $47.70; 027, F. Patruno, $53.40; 027, N. Pollard, E. E. Yturralde, $64.15 each (joint award); 250, J. A. Posytan, $68.30; 524, H. H. Richter, $269.60 (two awards); 001, J. A. Pinson, $15; 143, P. Sletnar, $42.50; 810, A. M. Smith, $558; 059, L. Smith, $160.90; 401, R. T. Snow Jr., $15; 015, J. N. Soures, $28.40; 027, M. D. Stonebreaker, $35 (two awards); 401, C. H. Stringfield, $188.80; 144, R. L. Wagner, $38.90; 001, J. W. Weisman, $82.10; 401, J. E. Williams, $15.

Deaths

CONVAIR

LUTZ—George, Dept. 016, died April 27. Survivors include his wife, Elsabeth, and sons Larry, Russel and Roger.

CAMERON—Harry H., retired Jan. 5, 1961, died March 28. Survived by his wife, Florence.

HUGHES—Earl T., retired Aug. 31, 1966, died April 18. Survived by his wife, Bernice.

Service Emblems

CONVAIR

Service emblems due between May 1 and May 15.

Thirty-year: Dept. 500, P. D. Ferrara.

Twenty-five-year: Dept. 001, P. Gourdin; 027, B. L. Baxley, C. W. Tabor; 202, C. L. Smith; 400, C. F. Hanson; 401, R. W. Trantham; 833, Roberta J. Grand.

Twenty-year: Dept. 016, Alta S. Jones; 059, W. R. Gordon; 131, Dorothy V. Corrao; 144, J. H. Brewer; 149, R. H. Collins; 507, C. N. Walter; 515, H. L. Ashton; 565, Louise B. Ellis; 761, L. Spurgeon, E. H. Vossen.

Fifteen-year: Dept. 059, Lois L. Fekke; 110, H. F. Spuehler; 250, W. Horn; 401, H. R. Johnson, J. T. Treat; 518, Dolores J. Ries; 544, F. J. L'Heureux; 565, E. V. Mansfield; 581, E. J. Velton; 840, R. L. Eastberg, Barbara R. Pitcock; 950, J. R. Robinson.

Ten-year: Dept. 059, R. E. Brisbin, Georgia L. Easland; 130, R. D. Halstead; 131, G. R. Starkey; 140, A. J. Genco, T. J. Phillipp; 144, R. F. Frederick; 149, C. N. Tomlinson; 194, Peggy J. Bullock; 195, Delores D. Nickiaus, J. White Jr.; 250, M. E. Baldiviez, W. W. Muse III, R. W. Rowell; 400, Deloris A. Grantham; 401, P. J. Stoesser Jr.; 532, H. H. Trebes; 545, E. F. Smith; 566, J. Flores Jr.; 574, R. J. Kowalczyk, D. L. Ramsay; 585, M. Downing, G. Tateishi; 731, A. Okuni; 780, J. Barnes, W. M. Myers; 954, Clara B. Denker; 961, J. E. Fithian; 962, Margaret E. Shelsky; 966, C. D. Pengelley; 979, C. E. Applegate, R. J. Moritz; 985, H. B. Stafford.

Retirements

CONVAIR

BRODFUEHRER—William A., Dept. 732-0. Seniority date Jan. 20, 1947, retired April 25.

D'AMORE—Jessie J., Dept. 986-4. Seniority date June 11, 1959, retired April 16.

DWIERE—Harlan J., Dept. 059-5. Seniority date Oct. 21, 1941, retired April 30.

EADE—William R., Dept. 031-0. Seniority date Oct. 13, 1939, retired April 30.

FISCHER—Neva H., Dept. 016-0. Seniority date Aug. 17, 1950, retired April 30.

HARRISON—Scott R., Dept. 579-1. Seniority date March 21, 1956, retired April 21.

HINSHAW—Leo C., Dept. 460-0. Seniority date May 2, 1967, retired April 30.

KROWL—Elmer L., Dept. 027-0. Seniority date Sept. 30, 1965, retired April 30.

SHARP—Albert R., Dept. 031-0. Seniority date Sept. 30, 1955, retired April 30.

WITKOVIC—Michael G., Dept. 146-6. Seniority date May 2, 1956, retired April 21.

WOODY—Charlie R., Dept. 027-0. Seniority date Dec. 2, 1966, retired April 30.

Rider-Driver

CONVAIR

RIDE WANTED—From Mt. Ashmun Dr. (off Balboa and Mt. Everest) to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call Margaret ext. 688 LF.

RIDE WANTED—From Fletcher Hills to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call Alvin McEachern ext. 519 LF or (home) 442-4156.

RIDE OR CARPOOL WANTED—From 8th and Harbison, National City to Kearny Mesa plant, 7:30 to 4 or 4:15 shift. Phone Carl ext. 1461 KM or (home) 477-2492.

Personals

CONVAIR

We thank you for your kindness and sympathy at a time when it was deeply appreciated.

Mrs. Earl T. Hughes and family
Mrs. Donna Clark
Frank Hughes

* * *

Anyone who has had a car vandalized while parked on Sassafras near Pacific Highway, please contact me.

James Abernathy
ext.481 LF

Births

CONVAIR

INFELD—Son Ross Sterling, 6 lbs., 12 oz., born April 18 to Mr. and Mrs. A. G. Infeld, Dept. 142.

General Dynamics News

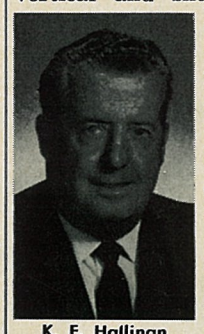
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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Hallinan Named V/STOL Aircraft Marketing Head

Kenneth F. Hallinan has been appointed marketing manager for vertical and short takeoff and landing (V/STOL) aircraft for Convair division. He reports to E. J. Hopley, director of new product development.



K. F. Hallinan

Hallinan will study the market for V/STOL aircraft with a view toward Convair developing and marketing such aircraft both for commercial and military use.

Hopley said Convair has allocated a major portion of its "available resources" this year to market analysis and research and development work on new applications for tilt-wing and short-takeoff aircraft.

Hallinan worked for Lockheed Aircraft in commercial sales before joining Convair. He formerly was employed by Hiller Aircraft, American Machine and Foundry, and Northrop Aviation.

A native of Chicago, he attended high school in Hollywood and studied at USC, UCLA, the University of Shanghai in China, and the University of Santo Tomas in the Philippines.

Material Handling Review Group Named To Check Problems

A material handling surveillance committee has been established within Convair division to check material handling procedures and equipment and institute corrective action when problems are found that could cause injury or damage.

W. E. Wise, manager of industrial engineering, said the committee is expected to function during the DC-10 start-up phase and will assist personnel with line responsibility in implementing the program and specifically with DC-10 material handling plans.

R. D. Marks, chief of industrial engineering projects, is chairman of the committee, which will meet weekly. Other members are George Carroll, operations; R. D. Leonard, plant engineering; Lee Shipstead, manufacturing control; Dave Arnott, reliability control, and Gary Garrison, stores.

Employes knowing of present or potential material handling problems are asked to report them to the committee through supervision.

Wise said the committee will check the condition of material handling equipment, application of handling principles, storage facilities, and protection of parts. Handling and packaging standards will be revised as needed.

"We are charged with assuring damage prevention — rather than with 'putting out fires after they occur,'" Marks commented. Surveillance tours of problem areas began this week.

Committee members have issued directives to make sure all segments of their organizations are alerted to problems and corrective action instituted to insure maximum benefits, Marks said.

Magnuson Speaks At Chicago Seminar

W. E. Magnuson, chairman of Convair division's Craftsmanship program, discussed "The 'How' of Quality Motivation" May 7 at a Zero Defects seminar sponsored by the Defense Contract Administration Services Region (DCASR) in Chicago.

Also speaking at the "Zero Defects — Today's Challenge" seminar were officials from the Office of the Assistant Secretary of Defense-Installations and Logistics, Contract Administration Services of the Defense Supply Agency, DCASR-Chicago.



ENGINEERING HONORS—Structural analysis group (Dept. 587-0) received Convair engineering department's Craftsmanship banner for exemplary work during first quarter. John Wild, director of engineering technologies who made presentation, and Sally Lasky, secretary for group, hold banner as T. L. Heid, chief of structural analysis, displays corresponding certificate.

Convair to Participate in Effort To Provide Youths Summer Jobs

Convair is participating in a county-wide campaign to help provide summer jobs for disadvantaged youths from 16 to 21 who are presently attending school.

The campaign, under the slogan "Give a damn . . . Give a job," will be topped off with a Job Fair, June 4, at the Community Concourse. Convair and other participating companies will conduct on-the-spot interviews for hiring and counseling at the fair.

Under way now is a drive, conducted by the National Alliance of Businessmen in cooperation with the City of San Diego and the San Diego Jaycees, to obtain job pledges from the management of about 1,500 businesses in this area.

Convair has pledged to provide a minimum of 15 summer jobs for youth.

In addition, to assist the Jaycees who are running the job pledge campaign, 13 Convair employes have pledged their support to the program on a part-time basis.

Convair also participated in a summer youth-hire campaign last year. Fifteen young people were hired in what was termed a "very successful program" by Gene Fox, Convair manager of personnel.

The goal is to provide summer jobs for underprivileged youth and Convair plans to hire as many girls as boys.

100 Disadvantaged Will Get Training

Work has begun at Convair on a Department of Labor contract to train and hire 100 previously hard-core unemployed.

The contract comes under the JOBS (Job Opportunities in the Business Sector) program whereby firms receive partial reimbursement for training costs.

This is the second year Convair has participated in hiring, counseling and training of the unemployed disadvantaged. Last year 53 were hired and 42 are still with the division.

Gene Fox, manager of personnel, said the 1968 program was completed with excellent results.



JOB PLEDGE—M. V. Wisdom, Convair director of industrial relations, signs pledge card assuring 15 summer jobs for disadvantaged youths. Pledge is part of Convair's participation in current county-wide campaign to find summer work. Paul Avers, left, of Junior Chamber of Commerce, and Gene Fox, Convair personnel manager, look on.



SUPPLIERS VISIT—More than 500 Convair personnel conferred with representatives from 20 supplier firms during a Value Engineering Workshop Suppliers' Day show May 5 in the Lindbergh Field plant cafeteria. Castings, metal fasteners, sealants, coatings and other products were displayed.



It's Trite But True Only One Sure Thing

Need ready money?

Las Vegas is a good source. Of course, you're liable to lose.

Playing the races is another way to clean up, though there also is a good chance of being cleaned. (The bundle might have been on Dike on the nose, instead of Majestic Prince.)

And there's the stock market, but here again there's no sure thing.

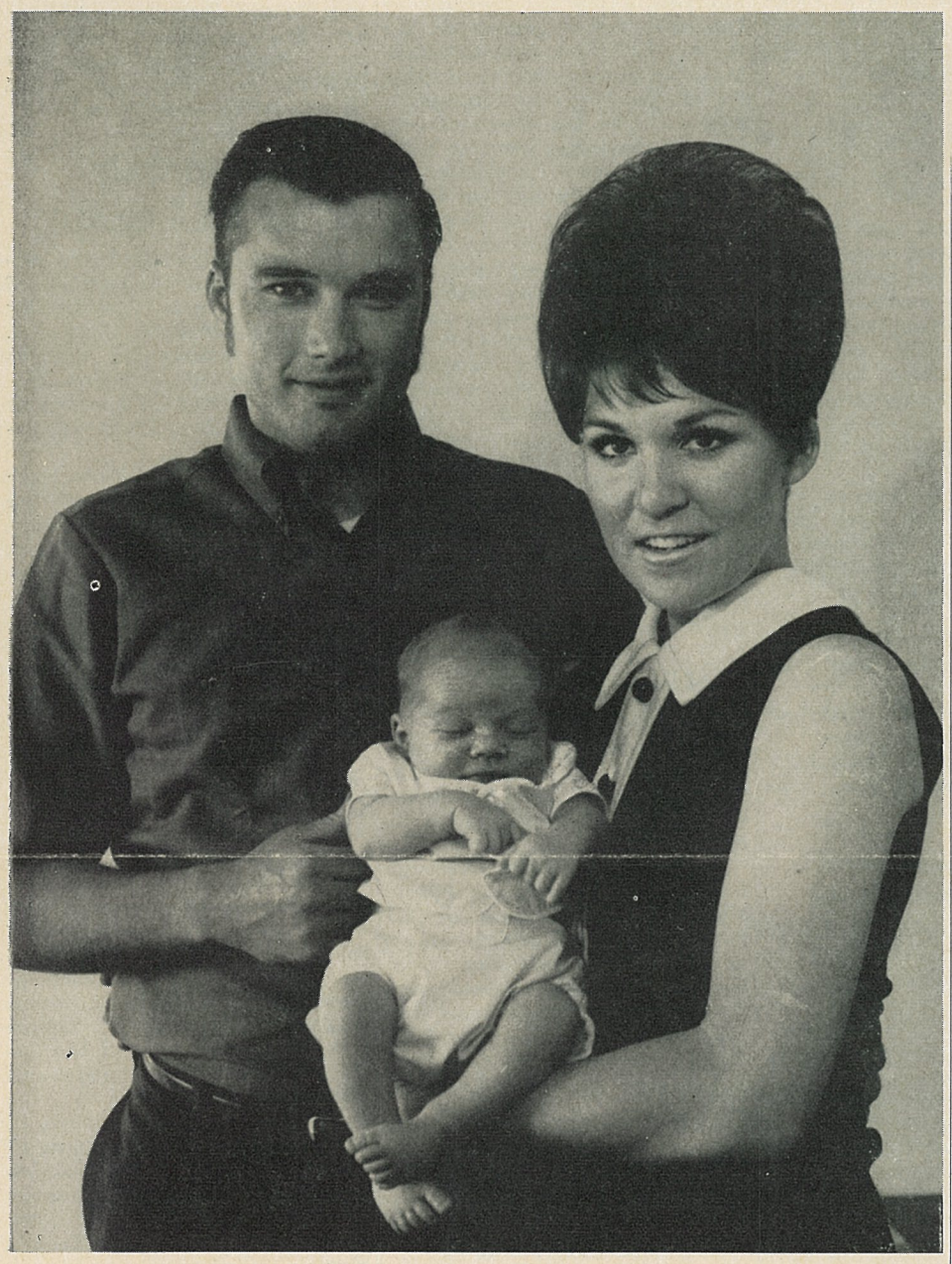
Or robbing a bank can be remunerative, though dangerous.

Investing in building and loan funds is reasonably safe, but this requires an iron will, to separate the wife from a certain sum every payday for deposit.

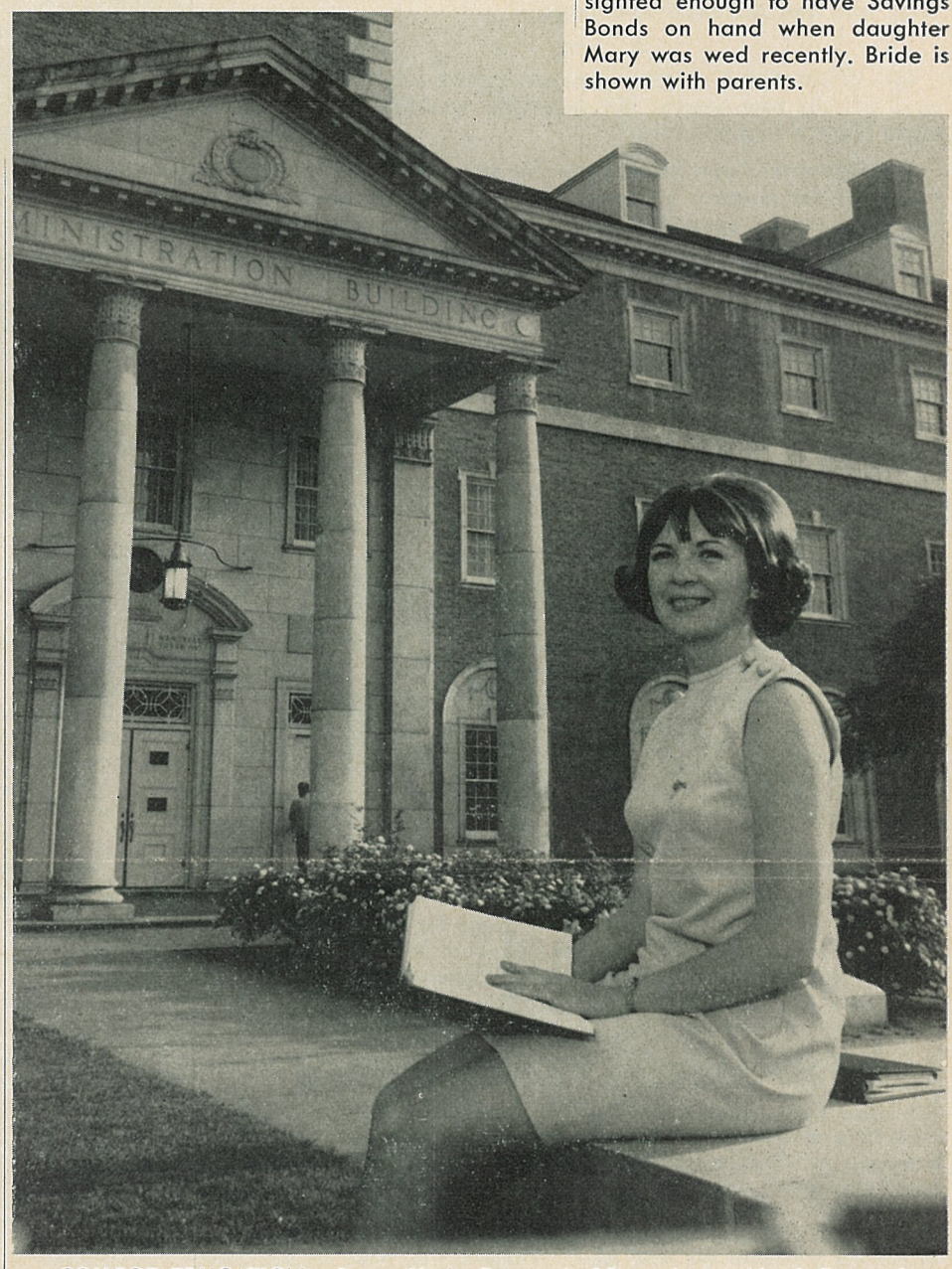
It's trite, but it's true, that there simply is no investment as safe as U.S. Savings Bonds and no means of buying them as convenient as payroll deduction. The money is invested before you—or the little woman—can lay hands on it.



BRIDE—Weddings are expensive affairs, as fathers of girls are well aware. C. L. Amaral (Convair Dept. 140-2) was foresighted enough to have Savings Bonds on hand when daughter Mary was wed recently. Bride is shown with parents.



"BABY" BONDS—Paul Weiland (Convair tool and cutter grinder) and Mrs. Weiland are shown with Darin David who arrived April 12. Blissfully unaware that there were expenses involved in his entry to the world, Darin declined to interrupt nap for photographer. Weiland used Savings Bonds to finance hospital maternity expenses. (He also used bonds for down payment on 1968 Camaro!)



COLLEGE EDUCATION—Pretty Linda Emanuel, 20, senior at North Texas State University, is shown on campus. Her father is S. T. Emanuel of Fort Worth division who financed most of Linda's education with Savings Bonds (he's been regular purchaser since 1942). Linda will receive her degree this month in home economics. Meanwhile, this is not the only project Emanuel has financed with bonds. See below.



"BONDED" AUTOS—Wayne Turner, Convair education specialist, has been buying Savings Bonds by payroll deduction for a long time, and uses them when it comes time to buy a new car. He is shown with new Oldsmobile purchased recently with bonds savings. Admiring car is Paulette Ache, secretary in Fort Worth division office at San Diego. New cars in 1956 and 1962 were similarly financed. "I prefer this to paying interest to a finance company," Turner said.



BONDS BUILT IT—Fort Worth division's S. T. Emanuel has built two houses with materials bought with Savings Bonds cash. The first was in 1946, now valued at more than $8,000. The second, on an acre of land near Springtown, Texas, he plans to occupy on his retirement. Mr. and Mrs. Emanuel are shown in front yard of latter with house in background. Cost of materials for this home was about $7,800 with Emanuel doing most of construction work himself.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

(Continued from Page 1)

cent of the 16,000 total. In future all GD people will be assured of tickets.

★ ★ ★

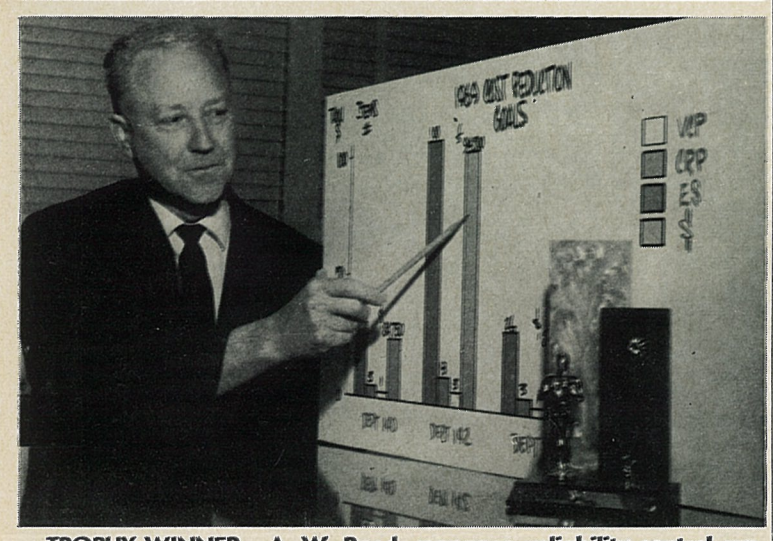
Q—The last issue of GD/NEWS carried a story about volunteers being needed to help package Viet Nam Gift Pacs. I called the phone number listed and got an unhappy private resident.

A—Correct number is 281-7306, the address is 3102 Reynard Way, and they still need volunteers.

★ ★ ★

Q—When Q&A began, you indicated answers would be sent within two weeks. My question was not answered for more than a month. Why?

A—Responses have taken longer in some cases. Some required more time for research and analysis, some have required management to examine operating procedures and determine whether to change them, some have required coordination with other divisions, and some have been thoughtful questions where there wasn't a simple or immediate answer. Two weeks is still the goal.



TROPHY WINNER—A. W. Reed, manager, reliability control support services, shows off trophy he won for contribution to cost reduction during 1968 and points to goals for 1969. Trophy was presented to him by L. I. Medlock, director of reliability control, because departments reporting to Reed showed greatest improvements during 1968 in cost reduction program.

Youth Firm Receives ASQC Chapter Award

Telepad Co., a Junior Achievement firm sponsored by Convair Management Club, recently received an award plaque from the San Diego section of the American Society for Quality Control for having produced the best JA-company quality assurance manual.

Under the JA program, groups of teenagers establish business "corporations" and manufacture and market products during a 30-week period. Adults from business firms or organizations in the community serve as advisors.

Telepad Co., with 14 JA "employes" from area schools, produced a telephone pad and phone cradle backed with adhesive for mounting adjacent to a wall phone.

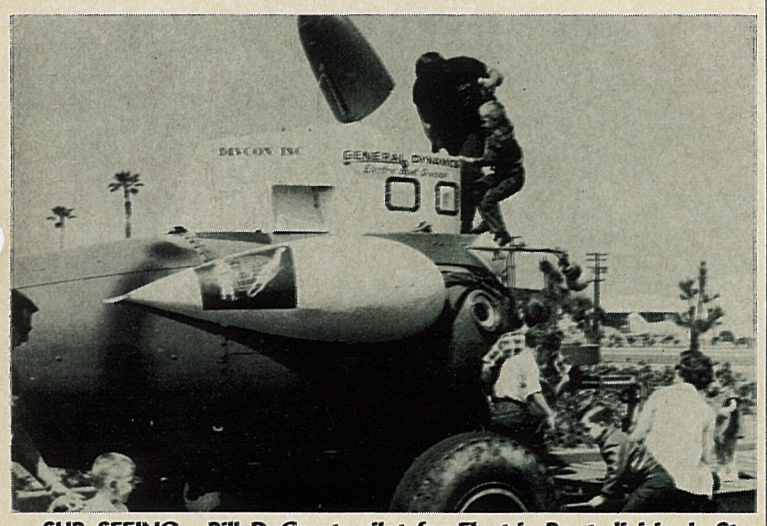
Convair Management Club members have been serving as advisors for three of 32 local JA firms. The Telepad Co. quality assurance manual won in competition with those from the other firms.

Advisors for Telepad Co. were Ron Kolek, sales; Al Landry, production, and Jim Parr, administration. All are quality assurance engineers in Convair's Dept. 144-1.

Two More Bomber Pioneers Disclosed

As it turns out, Mrs. Ruby Dean (GD/NEWS, April 30, 1969) has company as "Last of the Bomber Women."

Also still with Convair, and members of the original 40 women assemblers that went to work Sept. 15, 1941, are Mrs. Frances Ciprian, Dept. 780-1, and Mrs. Alma Emmons, Dept. 019-0.



SUB SEEING—Bill DeCourt, pilot for Electric Boat division's Star II, lifts son, Bobby, 5, aboard two-man research submarine during "open house" recently for families, school groups, and others. Star II was on display outside General Dynamics' Harbor Drive Facility in San Diego.

IRC to Sponsor Annual Shoot

Gun buffs will have an opportunity to take part in the 16th annual Industrial Recreation Council shoot May 25 and June 2 that encompasses pistol, skeet, rifle, and trap competition.

Pistol firing, both center and rim fire, is slated for Sunday, May 25 at the San Diego Police Pistol Range. Rim fire events begin at 9 a.m. with center fire activity following at 11 a.m. Skeet events are set for the same day beginning at 10 a.m. at Convair's Gillespie Field range. At the same site on the following Sunday, June 2, rifle firing begins at 9 a.m. and trap shooting at 10 a.m.

Jack Swank, of Stromberg DatagraphiX, will serve as range master for the Gillespie Field events and said NRA, ATA and NSSA rules will prevail.

Ames Takes Office In Coineers Club

Convair Coineers Club had its installation banquet recently at the Lindbergh Field cafeteria.

Steve B. Ames was installed as president, Gael Dewey, vice president, Ruth Bertling, secretary, and Harry Jennings, treasurer. Jennings, as outgoing president, was presented a trophy in recognition of his work during the past year.

Winning trophies for exhibits were Chuck Willey, first place for an exhibit of 20th century half dollars; Vince Bacon, second place, U. S. type dimes; Catherine Edgerton, third, bits and pieces of the pillar dollars; Harry Jennings, fourth, state sales tax tokens.

Joe J. Garside was master of ceremonies; Francis Jones, installing officer. Pete Mitchell, La Jolla coin shop owner, was guest speaker.

Talk on 'Headaches' Scheduled by Wives

Convair Wives Club will hold its monthly luncheon May 21 in the Stardust Hotel with Dr. Samuel Troyer speaking on "Common Causes of Headaches." Social hour begins at 11 a.m. and lunch at noon.

The club's membership tea is scheduled at 1 p.m. May 28 in the CRA Clubhouse. Wives who can provide recently made crafts, cut flowers or snack sets should phone Doris Browning, 295-5369, or Flora Loftin, 276-4270.

Fishermen Slate Lake Henshaw Trip

CRA Fishing Club has scheduled an outing May 17-18 to Lake Henshaw. Members plan to begin angling at 6 a.m. from reserved boats.

Fifty-two anglers had good luck at club's Salton Sea trip in April with enough fish landed to feed all at a potluck supper.

Club's next meeting is May 20 at Gillespie Field Clubhouse with dinner at 6:30 p.m. and 7:30 meeting.

Volleyball Action Under Way Tonight

Volleyball action gets under way tonight at Municipal Gym in Balboa Park.

According to Pete Beyrer, in charge of the league, each match will be best two of three games. Matches will be played on Court 3 with first half winner playing second half leader one, two of three game match for the championship.

ETR Camping Club Holds April Outing

Convair Camping Club at Eastern Test Range (ETR) had their first 1969 outing in April travelling to Carpenter's Camper's World near Inverness on Florida's west coast. Thirteen families attended.

Club's new Wagon Master is Sal Puleo and Ace Nagle is his alternate.

Charity Grants OKd By Electronics-SD Totaling $13,000

Electronics-SD's Employes' Con-Trib-Club has paid $13,000 this year to nine health, youth and community service agencies in San Diego County.

Largest amount was a $6,000 initial payment toward an $18,000 pledge for the year to United Community Services for support of its more than 60 member agencies.

A final $1,000 payment was made toward $3,000 pledged to Boys' Club of Clairemont for use toward construction of its swimming pool and related facilities.

Other contributions included $2,500 for the Home of Guiding Hands for retarded children in Lakeside, $1,000 for purchase of treatment room equipment for the new Children's Hospital building, $500 for the San Diego chapter of the Arthritis Foundation, $500 for the San Diego County Heart Association, $500 for Muscular Dystrophy Association of America, $500 for the San Diego County chapter of the March of Dimes, and $500 for the Junior Achievement building fund.

Gloria Cooper, Con-Trib-Club secretary, said 669 employees are contributing regularly through payroll deduction. In addition to supporting charitable organizations, the club is providing emergency aid for several employe families struck with financial catastrophe because of circumstances beyond their control.

George W. Leesch is chairman of the Con-Trib-Club. Committee members are Fred Maus, Gerald Lynn, William Lynt and Ray Trent.

Rockhounds Elect New Officer Slate

CRA Rockhound Club has announced its 1969-70 officers and board of control. They will be installed at the club's June 11 meeting.

They are: Al Aron, president; Bill Borneman, vice president; Milton Garman, treasurer and Bette Clancy, secretary; Board of Control — Gerry Gorman, Roy Haubert, Lorraine Hudson, Ken McCafferty, Ken Soper and Roy Wolverton.

Edwards to Head Contracts Chapter

J. H. Edwards, Convair chief of contracts, has been elected president of the San Diego chapter of the National Contract Management Association.

Among his new duties will be the task of preparing for the first national installation of officers ever held in San Diego.

Among guests June 7 at the national meeting will be Assistant Secretary of Defense Barry J. Shillito.

Clothing Sought For Survivors of Fire

Les Fussel of Convair's Dept. 057 is seeking clothing donations for surviving members of the family of Bob Sugiyama, a neighbor who lost his life when fire destroyed his home.

Needed is size 8 clothing for two boys, size 6 for two boys, size 5 for one boy, size 10 for one girl, and size 12 for their mother. Fussel can be contacted at ext. 585 LF.

Quality Magazine Tells of ZD Award

A feature article on Convair's winning of the Air Force Systems Command Zero Defects Craftsmanship Award is in the April issue of Quality Progress magazine, now in the division library.

In the same issue is an article on "Techniques of Supervision and Training" by Clarence L. Amaral of Dept. 140-1.

EZ DUZIT

Mgt. Club Plans 'Country' Party

Convair Management Club members and guests will dine on barbecue beef and dance (square and round) to the music of Arkie Guerin's seven-piece band at a "Western Jamboree" May 24 in the Balboa Park Club.

Jeans and calicos will be dress of the day and festivities will get under way at 7 p.m. Square dance demonstrations and instruction will be integrated with music for modern dancing.

Cost, including dinner, will be $9 for Management Club member-couples and $10.50 per couple for guests. Tickets are on sale through club boosters.

Planning committee members are Wes Magnuson (chairman), Don Menard, Paul Green, Al Landry, Ted Lamoureux, Roy Gilliland, Marty Stutz, and Marv Rickling. Reliability control will be sponsoring department.

Soviet Space Talk Set For AIAA Meeting

Members of the San Diego section of the American Institute of Aeronautics and Astronautics (AIAA) will hear Dr. Charles S. Sheldon II present "A Current Look at the Soviet Space Program" at a May 16 meeting in the Mission Bay Room of the Bahia Hotel.

Sheldon is chief of the science policy research division of the Library of Congress in Washington, D.C. New section officers also will be installed at the meeting.

Tickets will be $3 for AIAA members and $7 for guests. Social hour begins at 6:30 p.m. and dinner at 7:30. Reservations are being taken by Janet Bourque, 422-7111, ext. 1709.

Convair Son Wins Tech. Writing Honors

Glen Allen Evans, 16, son of Harold Evans of Convair's Dept. 517-0, won second-place individual trophy and $50 in a technical writing competition sponsored recently by the Science Achievement Club of the U. S. Naval Electronics Laboratory Center and the local chapter of the Society of Technical Writers and Publishers.

The award, presented April 18 at NELC, was for excellence of a technical paper on suppression of leukemia in mice that accompanied his award-winning entry in the Greater San Diego Science Fair.

Daughter Awarded Bond For Essay

Sharon Bechthold, 17, daughter of Percy Bechthold of Convair's Dept. 400-2, recently received a $25 Savings Bond for winning an "Americanism" essay contest sponsored by the San Diego district of the California Federation of Women's Clubs.

Miss Bechthold, a junior at Christian High School, received the first-place award for students from private and parochial schools in the San Diego area.

40 at Vandenberg Attend Mgt. Seminar

Forty selected supervisory and salaried Convair personnel at Vandenberg AFB attended a six-hour Management Seminar conducted May 5 and 6 by Dave Chigos, an education specialist in Dept. 130-3.

Chigos also addressed a combined meeting of Vandenberg management clubs May 5 on "Facing the Challenge of Change."

Solheid Schedules Talk at Conference

L. J. (Slim) Solheid, Dept. 515-0, technical manuals group supervisor, will participate in discussions on cost and time reduction in technical manual preparation at the 16th annual International Technical Communications Conference in Washington, D. C., May 14-16.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is May 20. Call ext. 1071 or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Annual equipment show May 21, 7:30 p.m. Sierra San Pedro Matir weekend, May 30-June 1.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—Intermediate dancing class starts May 26, 7:30-9 p.m., picnic shelter at Missile Park.

BICYCLE CLUB—50-mile ride, May 24, 7:30 a.m., meet at CRA Clubhouse.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting May 18, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m.

CHORUS—Rehearsals 7:30-9 p.m., Wednesdays, CRA Clubhouse. Recital June 22, Madison High School auditorium.

DELTA DIVERS—Meet tonight (May 14), 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting, 7:30 p.m., May 20, Gillespie Field Clubhouse.

GOLF—Rancho Bernardo tournament, May 24-25.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Friday; 10 a.m. to 5 p.m. Saturdays.

HI-FI/MUSIC—Potluck picnic, May 16, CRA Missile Park, 6:30-10 p.m. San Diego Accordion Studio will furnish music.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Highway 80 (Interstate 8) and Lake Murray Blvd.

JUNIOR SCIENCE—Workshop May 16, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

ORGAN CLUB—Meet May 27th, Gorman Residence, 6371 Wenrich Dr., 7 p.m.

PISTOL CLUB—Shoot May 18, 9:15 a.m., San Diego Police Pistol Range. IRC shoot May 25.

RADIO CLUB—Meeting May 15, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting tonight (May 14) 7:30 p.m. Horseback riding lessons offered starting May 25 at Bob Bradley's Stables in Bonita.

RIFLE CLUB—Senior shoot tonight (May 14), 7:30 p.m., junior shoot, May 18, 1 p.m., Gillespie Field Range.

ROCKHOUNDS—Meet tonight (May 14,) 7:30 p.m.

SAILING—Meeting May 28, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB—Meet tonight (May 14), 7:30 p.m., Convair executive dining room, Lindbergh Field plant.

SQUARE DANCE—Dance Thursdays, 8-10 p.m. Party night, May 15.

STAMP CLUB—Meeting May 22, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m., Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS—16-day Caribbean Carousel, July 19-Aug. 3.

TROPICAL FISH—Meeting and work shop Mondays, 7:30 p.m.

WIVES—Potluck luncheon and craft session May 28, 10 a.m.



DESERT CAMP—This was Convair Radio Club's station W6UUS during Borrego road races recently. Setting was far cry from clean rooms of CRA Clubhouse where the station usually operates. Shown are Don Lanthier (WB6RRY), of Convair; Walt Walters (WA6KHN) of North Shores Radio Club who with Sandy Johnson, center, helped Convair operators, and Alex Halyburton, right, (WB6TQF) of Convair.



CRA OFFICERS—Newly installed officers of Convair Recreation Association, from left, are Dick Bowen, president; Steve Berry, vice president; Arch Ellsworth, treasurer; Inez Schurr, secretary.

Cyclist Campbell Is 'Man of Year'

CRA Bicycle Club presented its Man of the Year award to Cy Campbell recently for "his tireless and outstanding efforts to maintain the club's ride program and other activities."

The presentation was made at the annual awards banquet at the King's Inn.

Other awards went to:

Myke Dickey, best overall rider in the men's group; Marilyn Dickey for best overall rider in the women's group; Campbell for best 50-mile ride; Dick Gilbert for best 25-mile ride; Wally Gilstrap for best 50-mile junior division ride, and Mark McLaughlin, best 25-mile junior division ride.

Riders earning jerseys for completing 200 miles in club sponsored rides were Russ Kennedy, Gordon Rainer and Bob Williams. Caps for riding 400 miles were awarded to Agostino Arcidiacono, Kennedy, Dick Dege and Don Rodenberg.

Windbreaker jackets for riding 700 miles were presented to Arcidiacono, John Burnett, Campbell, Marilyn Dickey, Myke Dickey, Gilbert, Dave Lukens and McLaughlin.

Trophies for riding 1,000 miles were presented to Campbell, Burnett, Myke Dickey and Gilbert.

Officers installed were Gilbert, president; Lukens, vice president; Marilyn Dickey, secretary, and Myke Dickey, treasurer.

The next ride, 50 miles, will be May 24 starting from the CRA clubhouse at Kearny Mesa. Campbell, ext. 2056 KM, will be ride leader.

Hams Maintain Communications In Desert Race

The Convair Radio Club operated an emergency communication system for two days during the Borrego Rough 50 and 100 off-road races.

During the two days of racing the club dispatched two ambulances into the desert on emergency calls. In one accident a dune buggy hit a motorcycle while in the other a car sideswiped another, shaking up the occupants.

The CRA club station (W6UUS) operated at the starting line north of Ocotillo Wells in the Anza/Borrego desert and was on the air as net control for two full days, powered by an auxiliary power supply.

Alex Halyburton, assisted by Don Lanthier of the Convair club and John Campbella of the Palomar club operated the station. As cars left the starting line in groups of four, car identifications were radioed to checkpoints.

There were ten checkpoints manned by 12 ham operators. During the races, a continuous report was maintained. As each car passed through a checkpoint his position in the race was sent back to the start/finish line.

Besides Halyburton and Lanthier, other Convair men assisting were Joe Miller, Red Rush, Bill Roden, Dale Taber and Tom Eckles.

Camp Equipment Show Scheduled

CRA Adventurers' annual equipment show will be held next Wednesday (May 21) beginning at 7:30 p.m. in CRA Clubhouse at Kearny Mesa.

Three "typical camps," outfitted by members of the club, will be on display. Joe and Kay Quijada are setting up a summer backpack camp; John Smaldino, a car camp, and Tony van den Akker, a winter camp.

Commercial exhibits of boats, tents, trail foods, and backpacking equipment will be displayed. Jim Moore will have a kayak and expedition equipment display and Ray Madden is arranging exhibits of four-wheel-drive vehicles, dune buggies, and trail bikes.

There will be a 30-minute slide show on club trips in Southern California, Arizona and Mexico. The public is invited and refreshments will be served.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, May 24. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Rockhounds Slate Potluck Tonight

CRA Rockhounds plan a potluck dinner at regular club meeting tonight (May 14) at 6:30 p.m. A slide presentation follows.

Tick Canyon off California highway 14 is site of next field trip May 17-18. Members are asked to bring tools, wood, water and warm clothing and are cautioned not to enter any tunnels or shafts in the area.

For information and travel direction call Gerald Halterman at 444-5943.

Guassac Wins Horseshoes

Three Convair machinists at Air Force Plant 19 tossed their way to victory last month in the Dept. 015 handicap horseshoe tournament.

Barney Guassac bested singles competitors while M. L. Busse and John Jauregui outpointed 30 doubles teams.

Organized for lunch hour and rest period play by Nick Valentino, Dept. 015 set-up man, the contests spanned a six-week period.

"The most heartening result of the games was the intra department friendships generated by the competition," said Valentino. "We plan to have more tournaments in the future since this one was so successful."

Valentino hopes other Plant 19 departments will hold similar tournaments with an eye to possible play-offs at a plant picnic.



HORSESHOE WINNERS—Air Force Plant 19 horseshoe tournament organizer Nick Valentino, Dept. 015, presents trophies to winners in recent contests. They are (from left) John Jauregui, Barney Gaussac, singles champ, and M. L. Busse.

Douglas Nips Convair In DC-10 Golf Match

Members of Convair and McDonnell Douglas DC-10 project took to the golf links recently with nine foursomes competing in an 18-hole inter-company tournament.

Playing at San Diego's Cottonwood-Ivanhoe course, McDonnell Douglas golfers bested Convair in both gross (1784-1800) and net (1290-1328) scores.

Convair's Jerry Swarts, Dept. 149-7, took low gross honors with a 75 stroke tally which included 16 pars. McDonnell Douglas' Jerry Daniels shot a six under par 64 to win low net.

Another tourney is planned during which, according to Jack Beckman, Convair's DC-10 program administration manager, Convair will attempt to pass the "Perpetual Loser's Cup" on to McDonnell Douglas.

Intermediate Dance Class Starts May 26

A 12-week intermediate ballroom dancing class will be held from 7:30 to 9 p.m. Mondays beginning May 26 in the picnic shelter at CRA Missile Park. Cost will be $18 per couple.

Bob McGlade will be instructor and the course will cover fox trot, waltz, swing, cha-cha, rhumba, tango and samba. Registration will be at the first session. Phone Royce Riggan, ext. 200 LF or (home) 420-3775, for additional information.

Golfers and Wives Weekend on Desert

Eighteen golf enthusiasts and family members from Electronics-SD attended a weekend outing last month, staying overnight at Indian Wells and golfing on courses at Indian Wells and Palm Desert.

Electronics-SD's Recreation Association hosted dinner for the group at Rim Rocks, with dancing to the Ted Fio Rito orchestra. The Electronics-SD Management Club provided a complimentary ball for each of the golfers and San Diego 200th Anniversary medallions for the "golf widows."

Pistol Club Teams Top Solar Shooters

CRA Pistol Club teams nailed three of four top places in competition with Solar at police pistol range.

Four teams of four shooters from each company met in the annual match.

Convair's Roland Schneider was day's top marksman scoring 287-7x.

Next shoot and training class is May 18. Matches are at 9:15 and class at 10:30 a.m. IRC Match is slated May 25 at 9 a.m. Both are at police range.

New Members Sought For Dynamics Chorus

Persons interested in joining the General Dynamics Chorus may do so by attending rehearsals from 7:30 to 9 p.m. Wednesday at CRA Clubhouse. Call Jim Pate, ext. 1730 KM, or Warren Hoover, ext. 1926 LF, for information.

The chorus will present a recital June 22 in the Madison High School auditorium.



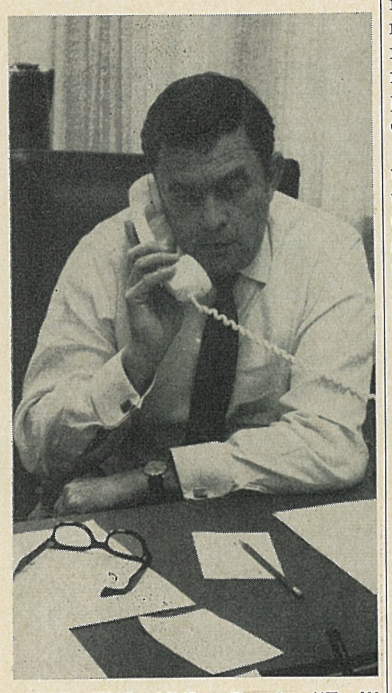
WOMAN OF YEAR—Mrs. Helen Ramberg, center, receives Convair Wives Club "Woman of Year" award from Mrs. Margaret Brock, outgoing president. At right George Schmiedel, recreation supervisor, holds plaque which will be displayed in CRA Clubhouse, carrying names of past winners.

Field Offices Manned By Elite Team of 50

Performing an essential liaison role between customers and General Dynamics operating divisions and subsidiaries is an elite team of 50 versatile professionals who operate from 16 key locations coast to coast.

Their primary mission (and 24-hour-a-day objective) is to see that General Dynamics' resources are quickly brought to bear on major problems encountered or anticipated in any customer area.

Backed up by secretarial and administrative personnel numbering about 40, they man Field Sales engineering offices in 11 states and the District of Columbia, with the headquarters office in Washington, D. C. under the direction of E. J. "Ted" LeFevre, Corporate vice president and general manager of the sales office network.



AT THE HUB—E. J. "Ted" LeFevre, Corporate vice president and general manager of sales office network, is shown at his desk in Washington, D.C.

"The team deals not only with day to day liaison but also devotes considerable effort to future requirements," LeFevre explained.

"They form the technical interface between the customers' scientific research groups and GD operating units, guiding divisional research and development activities along avenues having the most promise of contributing in an important way to future customer programs.

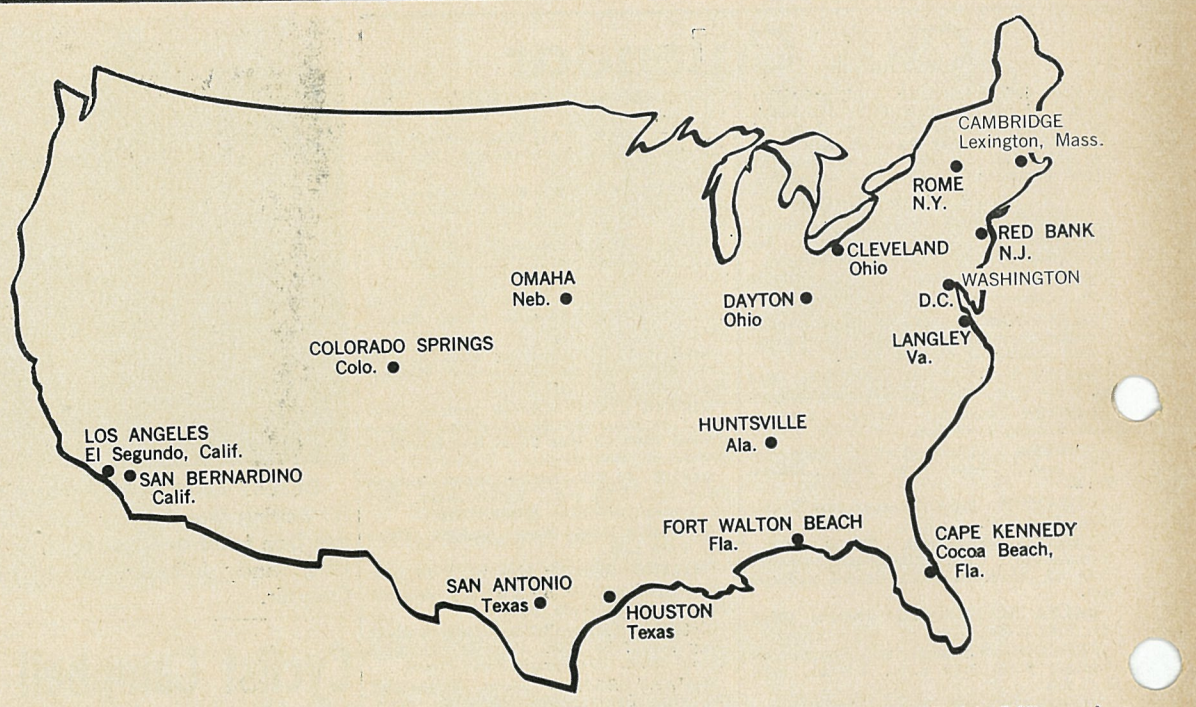
"Perhaps most important is to convey the customer point of view to technical, program planning and management groups in the divisions, while also acquainting customer scientific and technical agencies with General Dynamics' broad capabilities in many fields and the unique experience and know-how so abundant in its divisions."

Only men with unusually broad technical backgrounds can qualify to perform this role properly and GD's representatives are admirably equipped. In addition to technical and engineering training and practical experience, many have military backgrounds as well. Some have had commands afloat during military service and others have commanded aircraft units. Several have been experimental test pilots, both civilian and military. A number remain active in Air Force and Navy Reserve units.

Maintaining a sound working knowledge of technical disciplines encountered and a thorough understanding of customer requirements by itself is still not enough. GD's field men are able communicators. They must be able to command respect both in customer and divisional circles. And this they do.

"Engineering Excellence, as emphasized in 1969 as GD's 'Year of the Engineer' is particularly important to our Field Service Engineering Group," LeFevre commented.

"Customer confidence in General Dynamics and our future technical development is directly proportional to the degree of engineering expertise and the effectiveness of our product support."



STRATEGIC LOCATIONS—Scattered across U.S. at key points are Corporate Field Offices that serve as liaison between General Dynamics and customers.

Many Commands

Langley Office Covers a Broad Beat; Typical of Varied Responsibilities

(Langley office is typical of day-to-day pressures that characterize every one of General Dynamics' 16 Corporate Field Offices.)

Tidewater Virginia has possibly the finest natural harbor in the world at Norfolk-Newport News. It also has, in the same area, the greatest concentration of major military commands in the world.

Small wonder, then, that one of 16 field offices managed by General Dynamics' Washington Office should be located at Langley, Va.—little more than a stone's throw from Tactical Air Command (TAC) headquarters at Langley Air Force Base—home of the F-111—and the NASA/Langley Research Center—where the F-111's variable sweep wing concept was perfected.

Langley Field Office Manager Harry B. "Buzz" Henderson noted that the office recently celebrated its sixth birthday.

"In running this office," he commented, "my job is to be a middleman between the needs of the customer and the ability of the most appropriate General Dynamics facility to meet those needs."

"Stated another way," he added, "it's to get the customer and the division in the same church and the same pew. That isn't always easy."

In support of that statement, Henderson pointed out that his area of responsibility includes 38 major commands in Norfolk alone, including the Atlantic Fleet; Second Fleet; NATO's Supreme Allied Command Atlantic (SACLANT); the Naval Air Force, Atlantic; and the Norfolk Naval Supply Center.

Add to these such U. S. Army facilities as the Continental Army Command (CONARC), Fort Monroe, and the U. S. Army Transportation Command, Combat Development Center Detachment, and Army Aviation Materiel Laboratories, all at Fort Eustis.

Henderson's background is as broad and varied as the job. A former Navy fighter pilot with an engineering degree from the University of Southern California, he joined General Dynamics almost 14 years ago as an F-102 test pilot, advancing to assistant chief test pilot in the F-106 program before moving to the Washington Field Office in 1959 as Air Force Representative.

In 1963, Henderson became manager of aeronautical systems, Washington, and remained in the middle of the F-111 controversy there until moving to Langley in 1967 to assist TAC in welcoming the F-111A fleet into the inventory.

So demanding has this day-to-day responsibility for F-111 matters become that Henderson last year welcomed Charles N. "Chuck" McCauley as the Fort Worth division's F-111 representative in the Langley Office.

"The addition of Chuck McCauley was a godsend," Henderson said. "His ability to take hold quickly on some of the F-111 workload allows me to cover that much more of a very broad territory."



ON THE GO—Buzz Henderson of Langley field office hurries from one major military command to another in course of typical day.

Henderson is responsible for representation with all government agencies in the area. In addition to technical liaison in support of existing programs and contracts, he is also responsible for obtaining and administering request of quotations (RFQs), requests for proposals (RFPs) and invitations for bids (IFBs), from three government agencies; NASA/Langley, the Army Aviation Materiel Laboratories and the Norfolk Naval Supply Center. He is, of course, also responsible for marketing intelligence on a continuing basis.

General Dynamics' facilities represented actively by the Langley Field Office include: Fort Worth; Convair; Pomona; GD Electronics (both Rochester and San Diego); Stromberg-Carlson; Canadair Ltd.; Quincy; Stromberg DatagraphiX; Dynatronics, Orlando.

"In the final analysis," Henderson said, "the only way you can do this job effectively is by becoming an active member of the community in which you live. Business is people, and people, at least in our business, are not too different, no matter where you go."

Henderson practices what he preaches. His belief in the ability to work with people has made him district chairman of the Peninsula Council, Boy Scouts of America; vice president of the Langley Chapter, Air Force Association; president, Tidewater Chapter, Armed Forces Communications and Electronics Association (AFCEA).

If Langley is typical, field offices are busy, demanding places to be, requiring a rare balance of training, experience and commitment.



AT THE CENTER—Among important commands covered by Langley Office is headquarters of Tactical Air Command.

Canadair Sponsoring Training Course For Young Prisoners

Canadair Ltd. is sponsoring a novel computer programmer training program for a special class of people — young prison inmates serving first term sentences.

The program was the first by a private company in Canada to train young prison inmates for future industrial employment.

Twenty five have been enrolled in the COBOL business-language computer programming training program since it was initiated by Canadair in May, 1968, at the Federal Training Centre at St. Vincent de Paul, Que. Centre inmates all are 15 to 24 years old.

The program is designed to train students to meet minimum requirements for industrial employment as business-computer programmers when they are paroled.

Classes are held eight hours a day seven days a week. The course is divided into three phases, two for training and the third for experience on actual systems.

At the outset, Canadair, assisted by IBM, provided all instructors. Now "Ronnie," a graduate of the program who is serving a life sentence, is instructor with Canadair personnel serving as counselors.

Advanced students visit Canadair, two at a time once each week, to become familiar with computer installations and operations on a much larger scale than at the Centre.

Four students have been paroled and are now employed in the computer field, including three in Canadair's computer services department.

One young man deferred his parole three months to complete the course!

Alan McLeod, Canada's commissioner of penitentiaries, said success of the Canadair-sponsored program has resulted in similar programs being established in four other Canadian prisons.

The training program has been under the overall guidance of Neville P. Shevloff, director of systems and computer services at Canadair. Coordination has been handled by Yvon Tessier, EDP systems control supervisor, and Yvon Gagnon of computer services.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



Savings Plan Sign-Up Deadline is May 29

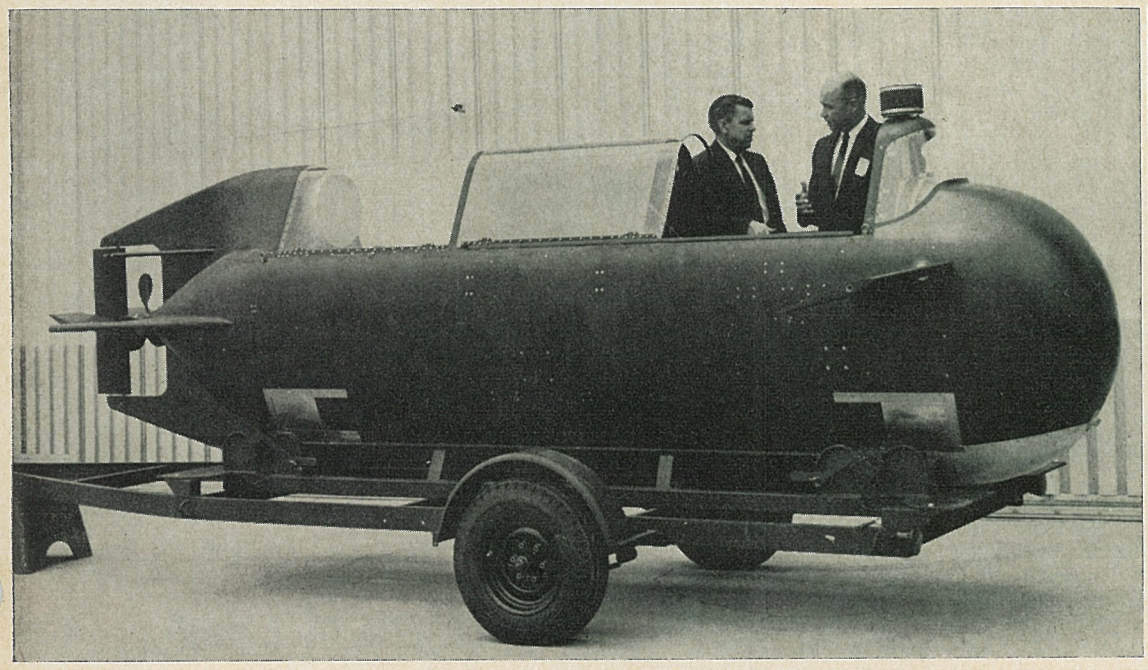
Eligible employes completing one year's continuous service and wishing to enroll in the General Dynamics Savings and Stock Investment Plan must file applications by May 29 for membership to become effective July 1 at the start of the third calendar-year quarter.

The May 29 deadline, falling on Thursday because of Memorial Day, also applies for Plan members requesting changes in investment options or percentage being invested.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 11 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 28, 1969



CONVAIR SUB—Andy Kremm, right, Convair Swimmer Delivery Vehicle (SDV) program manager, and Willard Martin, experimental factory general foreman, inspect one of Convair-built submersible diver vehicles. Nearing end of current production phase, SDVs were built for Navy.

S-3A Team Praised As Bowers Outlines Division's Progress

Although the S-3A contract is Convair's big goal, the division is building a base from which to work on other projects. This was the message delivered by General Manager Jack L. Bowers to Convair supervisors at the quarterly management meeting.

Bowers said Convair is in a strong competitive position on a number of projects. He took particular note of the S-3A and praised the team which put together the proposal, saying the experience gained would strengthen the company in working on other projects.

In discussing division objectives, Bowers said Convair is doing well in the area of quality and economics but is not reaching its goals in the area of safety.

Objectives for the year and the progress are:

Quality — attain 100 per cent successful delivery, launch and flight performance for Atlas and Centaur vehicles. Bowers reported that the division has a perfect record so far with five launches and five successes. This brings the number of successful Atlas SLV launches to 46 in a row.

The division is "meeting requirements" for the goal of winning the Air Force "Sustained Craftsmanship Performance" award. The division must match last year's performance of 14.9 defects per 1,000 manhours and through April the division was at a cumulative level of 14.7 defects per 1,000 man hours.

Management — meet DC-10 first delivery schedules. There are start up problems, which will make achievement of the delivery schedules a difficult task, according to Bowers.

Improve safety record by 10 per cent. "I cannot report that we are by any means meeting our goal" in the area of safety, Bowers said. He urged supervisors to stress safety more with all employes.

Complete implementation of Convair Integrated Management System (CIMS). This is "coming along well," Bowers said. He noted that CIMS has had a "beneficial impact on our customers." Convair "is one of the few companies that have a going management system that meets Department of Defense requirements."

Economics — exceed budgeted profit and return on investment. There has been "real good performance" on this goal. "We are currently ahead on both profit and return on investment."

On improving profit by $500,000 through value engineering change proposals, the division is behind on the goal but the general manager said proposed changes should improve the showing.

New business — win two new Atlas-Centaur missions and win major F-106 improvement program. The division has already won two new Atlas-Centaur missions. Convair is still working on upgrading the F-106 to suit the

(Continued on Page 2)

Hurry! Get Your Tickets To Sea World

Sales outlets report tickets going fast for the big June 7-8 General Dynamics' Sea World Days. Reduced-price tickets are on sale at all Convair, Pomona, Stromberg DatagraphiX and Electronics-SD outlets for the two-day family party at the 55-acre oceanarium park on Mission Bay.

Cost is $1.75 for adults (a $1.25 saving) and 50 cents for children (a 50 cent to $1.50 saving) and tickets will be good for admission on either day.

Families attending can see Shamu, the trained killer whale; a lagoon show featuring trained dolphins; an underwater show with sea maids doing routines with dolphins and seals; a seal and penguin show, and Japanese girl divers retrieving pearl-bearing oysters.

Other attractions include the sea grotto and fresh-water acquariums, a fresh-water dolphin pool, Lockheed's "man and the sea" exhibit, hydrofoil boats and a sky ride.

Although tickets tentatively are scheduled to remain on sale through June 6, early purchases have been recommended.

'Swimmer Delivery' Vehicles Developed

Convair division has scheduled final delivery of its current Navy contract to build Swimmer Delivery Vehicles (SDV), according to Andy Kremm, program manager, and Ben Swett, project engineer.

The program's three years of design, fabrication and production have been accomplished at Convair's Lindbergh Field plant.

The undersea vehicles were produced under direction of John Bergstrom, chief project engineer, and built in experimental factory under supervision of Nick Keough, factory manager, and general foreman Willard Martin.

The diver submersible craft boasts a free-flooding body and top speed of more than four knots using a 1.85 shaft-horsepower, 400 rpm direct drive electric power plant.

Equipped with a three-blade prop and silver zinc batteries, the subs will cruise at normal SCUBA depths.

The fiberglass hulled subs are designed to enhance effectiveness and safety of SCUBA-equipped divers in shallow water operations. Several mission options are available including undersea search, inspection, exploration, survey and recovery.

SCUBA-equipped crew members can communicate with each other through underwater intercom.

Convair is currently bidding to build similar vehicles for other government agencies.

First Italian Produced DC-10 Part Found OK

Convair and Aerfer Industrie Aerospaziali Meridionali representatives recently conducted first article inspection on the first part produced by Aerfer in its Pomigliano D'Arco plant near Naples, Italy, for the McDonnell Douglas DC-10.

Aerfer, under Convair subcontract, has been fabricating necessary tooling and will produce above-floor-level skin panels and related parts for DC-10 fuselages that will be assembled at Convair's Lindbergh Field plant.

Will Buxton, purchasing agent for foreign procurement and major subcontracts, said the first full-scale fuselage panel fabricated by Aerfer is scheduled to arrive in San Diego July 3.

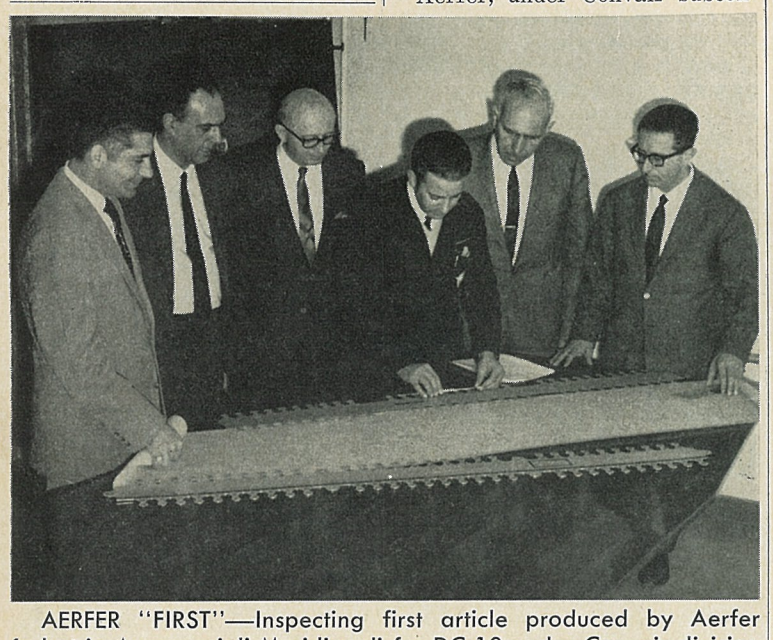
The first DC-10 production item to be completed with Aerfer tooling and undergo first article inspection was a finger doubler for use in joining fuselage sections. It was checked against design, tool, shop planning and other documentation and no discrepancies were found.

Convair established a permanent resident office at Aerfer late last year with Pete Nico of Dept. 820-0 as resident office manager, Herb Mishler of Dept. 140-2 as quality assurance administrator, Ralph Steele of Dept. 144-3 as quality assurance representative, and Ed Carosella of Dept. 820-0 as subcontract administrator.

Frank Eramo of tool engineering Dept. 400-2 and John Burgeson, a project engineer from Dept. 511-5, are currently on temporary assignment at Aerfer. Jim Davidson of Dept. 059-0 returned this month after a three-month assignment.

DC-10 panels produced by Aerfer will be shipped to Convair,

(Continued on Page 2)



AERFER "FIRST"—Inspecting first article produced by Aerfer Industrie Aerospaziali Meridionali for DC-10 under Convair division subcontract in plant near Naples, Italy, are, from left, Pete Nico, Convair resident office manager; Dr. Ing. Mario Orlando, Aerfer director of operations; Herb Mishler, Convair quality assurance administrator; L. Guardiano, Aerfer inspection foreman; Ralph Steele, Convair quality control administrator; Dr. Ing. Giuseppe Garofalo, Aerfer chief of inspection. Part is finger doubler for use in connecting DC-10 fuselage panels.

Teams Produce Improvements in Plane Designs

Certificates were awarded this month to 40 men who had spent two weeks learning value engineering principles and applying them to selected DC-10, C-5A and F-111 aircraft components.

Students in the Value Engineering Workshop at Convair's Lindbergh Field plant included a representative from Quincy division's material department, four USAF officers who are spending 10 months with Convair in an "Education with Industry" program, and 35 Convair men.

Each of the eight workshop teams gave a presentation on its accomplishments at graduation exercises at which J. M. Adamson, LF operations manager, spoke and presented certificates.

Team 1 suggested revisions in an F-111 panoramic strike-camera door to reduce number of parts from 43 to 12 for a potential 20 per cent cost saving. Team 2 redesigned a DC-10 cargo lock door latch for a potential 42 per cent saving.

Team 3 proposed use of a simplified DC-10 air conditioning door latch device, incorporating less expensive components, for a potential 36 per cent cost saving. Team 4 redesigned a C-5 horizontal stabilizer switch assembly to substitute "off-the-shelf" for special-made parts for a potential 23 per cent saving.

Team 5 analyzed an F-111 antenna signal coupler and suggested replacing a circuit board with

(Continued on Page 2)



TEAM ANALYSIS—Members of one of eight Value Engineering Workshop teams discuss possible fabrication changes for cost saving in production of F-111 air ejector nozzle duct. From left are Air Force Capt. W. E. Lounsbury (team captain), C. L. Good, C. P. Glover, W. F. Wennhold, R. M. Zeich, and (standing) team adviser J. J. Wheeler.

Volunteer Computer Experts Conduct Class For Youths

Seventeen Lincoln High School seniors received certificates May 20 for having successfully completed a seven-month basic business and scientific computer familiarization and programming course given by volunteer Convair computer specialists.

The certificates were presented at an awards dinner attended by the students and their parents in the executive dining room at Kearny Mesa.

G. O. Withem, chief of data systems for Convair, organized and administered the course, which was given Tuesday evenings at the high school and was attended as an extra-curricular activity.

C. E. Reid of Dept. 595-0, coordinator for the course, said the object was to show students how computers can be used in any field they choose to enter — not to make computer programmers out of them.

John A. Doggett of Dept. 595-0 taught FORTRAN scientific programming fundamentals. H. J. Coffey of Dept. 170-1 taught COBOL business-oriented computer programming technology.

Computer programs prepared by the students were checked out on Convair computers during class visits to the Kearny Mesa plant.

The 17 students have been accepted for college entrance this fall.

Convair-Nominated Vendor Wins Award

A company nominated by Convair has received an award from the Small Business Administration for "quality work" as a vendor for Convair.

The award was presented May 12 to the Langley Corp. of San Diego in Mayor Frank Curran's office during ceremonies inaugurating National Small Business Week.

COLUMBIA STUDENT ON DEAN'S LIST

Howard C. Peterson, a Convair employe now on educational leave, has achieved academic distinction of being placed on the Dean's List at Columbia University's Graduate School of Business. He will receive his MBA degree in September.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between May 16 and May 31.

Thirty-five-year: Dept. 001, L. Budzynski.

Thirty-year: Dept. 985, J. D. Frisby.

Twenty-five-year: Dept. 031, L. O. Rainer; 840, C. R. Kellogg.

Twenty-year: Dept. 027, Vardie Taylor; 110, Bernice H. Dickey; 144, F. R. Glick; 401, J. L. Vidovich; 511, L. G. Curtis; 515, C. S. Booraem; 531, C. L. Glasson; 761, C. J. Eskew; 832, Dragica Mitrovich; 985, R. W. Forney.

Fifteen-year: Dept. 002, G. S. Clinkscales, T. A. Roach; 059, Ora E. Morgan; 149, R. I. Barnes, E. C. Wright Jr.; 190, J. C. Cannady; 195, F. Walters; 401, A. R. Flores, A. E. Yeager; 511, W. J. Smith Jr.; 515, S. Lipsett; 544, E. P. Newman; 780, Elza B. Milner; 831, R. C. Dorame; 950, F. H. Bloschies; 953, C. E. Plummer Jr.; 966, H. A. Hunter; 985, R. W. Forney; 986, J. L. Greenstein.

Ten-year: Dept. 130, Wanda G. Parsell; 143, A. Ragsdill; 146, C. H. Kelly; 193, Lillian K. Wilson; 780, C. F. Hawes, F. J. Lay Jr., R. G. McKellips; 954, Patricia S. Ochiuto; P. E. Pemberton, L. F. Williams; 966, Jane Takeshta, R. L. Watson; 985, F. C. Spath; 999, L. W. Duncan.

ELECTRONICS

Twenty-five-year: Dept. 582. M. L. Barksdale.

Fifteen-year: Dept. 581, Lucienne A. Forcier; 614, S. J. Adams.

Ten-year: Dept. 101, F. J. Hickey; 581, M. E. Harrison; 615, A. J. Mancuso.

Awards

CONVAIR

Employe Suggestion Awards approved for the week ending May 9.

Dept. 460, F. A. Boyle, $15; 027, N. M. Bowen, $106.30; 149, L. A. Brugger, $144.90; 019, D. K. Budge, $15; A. J. Capuccini, $15; 113, D. W. Chase, $71.70; 578, J. C. Easton, $153.40; 027, L. A. Edrington, $15; 027, P. Estrada, $131.30; 045, E. F. Flukey Jr., $43.70; 049, L. C. Foust, $15; 143, V. M. Frankfather, $38.40; 144, H. M. Gallant, M. . Sorg, $182.50 each (joint award); 401, J. D. Giles, $15; 524, C. M. Gilliland, $15; 027, E. Hofmann, E. P. Osgood, $7.50 each (joint award); 579, R. H. Holland, $30.

Dept. 001, D. E. Howard, C. E. Scott, W. Weide, $9.23 each (joint award); 250, W. L. Hubbel, $15; 979, V. V. Jones, $45 (three awards); 045, M. M. Lopez, $34.90; 146, K. McCafferty, $132.90; 250, J. T. McElroy, $15.20; 420, T. H. McManus, $25; 045, C. R. Mansfield, C. P. Welch, $16.60 each (joint award); 144, F. Piersall Jr., $15; 015, N. Pointon, M. Shimatsu, $45.75 each (joint award); G. B. Reeves, $673.60; 780, R. M. Sailer, $31.20; 985, E. L. Settlemyre, $15; 250, W. T. Toon, $75.60 (two awards); 027, R. Walker Jr., $30; 019, B. Wesson Jr., $357.90.

Births

CONVAIR

McKEE—Son Paul Robert, 10 lbs. 1½ oz., born May 14 to Mr. and Mrs. R. Curt McKee, Dept. 130-4.

NAVARETTE—Son Michael Eugene, 5 lbs 12½ oz., born May 7 to Mr. and Mrs. Ray Navarette, Dept. 045.

Papers Presented

CONVAIR

ADSIT—N. R., Dept. 572-1. "Metal Matrix Composites—Where We Stand." Society of the Plastics Industry Meeting, Coronado, Calif., April 23-25.

BARTLE—E. R., B. F. MYERS, Dept. 596-0. "Two Reactions in the Carbon-Oxygen System Studied in Shock Waves." American Chemical Society Meeting, Minneapolis, Minn., April 13-18.

CHRISTIAN—J. L., Dept. 572-1. "Recent Developments in Filament Reinforced Metal Matrix Composit Materials." ARPA Symposium on High Performance Composites, St. Louis, Mo., April 8-9.

EVANS—E. A., A. B. WALBURN, Dept. 584-0. "Experimental Simulation of Two-Phase Hydrogen Venting to a Space Environment." Institute of Enviromental Sciences/15th Annual Meeting, Anaheim, Calif., April 20-23.

GIESEKE—R. K., Dept. 585-0. "Frequencies and Mode Shapes of a 100-foot Space Erectable Parabolic Antenna." ASME, AIAA/10th Structures, Structural Dynamics and Materials Conf., New Orleans, La., April 14-16.

MERZ—P. L., Dept. 572-1. "Fluorocarbon Elastomers as Potential Seal Rubbers for Aerospace Vehicles—Part 1—Commercial Fluorocarbon Rubber O-Rings and Part 2—Experiments Fluorocarbon Rubber O-Rings." American Chemical Society, Division Rubber Chemistry, Los Angeles, April 29-May 2.

STEURER—W. H., Dept. 587-0. "Processing of Materials in Space." SAMPE/15th National Symposium, Los Angeles, Calif., April 29-May 1.

Rider-Driver

CONVAIR

RIDE WANTED—54th and Springview Drive to Kearny Mesa, 7:30 to 4:15. Call Millie, ext. 3794 KM or 583-3465.

RIDER WANTED—From Hillcrest, Mission Hills to Kearny Mesa plant, 8 a.m. to 4:30 or 4:45 p.m. shift. Call Mitchell, ext. 1666 KM.

RIDE OR CARPOOL WANTED—From 9th and Hoover Sts., National City, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone ext. 1488 LF or (home) 477-1812.

Retirements

CONVAIR

BUSH—Lloyd L., Dept. 764-0. Seniority date Aug. 6, 1958, retired May 12.

EUDY—Seymore K., Dept. 031. Seniority date Sept. 9, 1953, retired April 21.

FISSELL—W. L., Dept. 715. Seniority date Oct. 7, 1946, retired March 31.

LEISZ—Walter P., Dept. 957. Seniority date Sept. 2, 1959, retired April 16.

SCOTT—Carl C., Dept. 733. Seniority date April 26, 1950, retired Feb. 19.

VAN QUILL—Albert L., Dept. 059-6. Seniority date Aug. 15, 1947, retired May 12.

Personals

CONVAIR

We would like to thank our many friends at Convair division for the many flowers and other expressions of sympathy upon the recent death of H. L. "Hank" Wernsing.

The H. L. Wernsing family, Fort Worth

* * *

Sincere thanks to everyone and the Con-Trib-Club for their kind deeds and help during our time of need.

Rachel Clark, Dept. 524-2 and Wayne Clark

Deaths

CONVAIR

BITZER—Eugene F., retired June 3, 1963 from Dept. 401, died May 7. Survived by a sister, Margaret.

COOPER—Carl O., retired Dec. 29, 1965, died May 3. Survived by his wife, Jessica.

EMMONS—Joseph R., retired Dec. 31, 1968 from Dept. 015, died May 6. Survived by his wife, Thyra.

HARRISON—Orville N., retired July 20, 1963, died April 22. Survived by his wife, Opal.

McKINNEY—Samuel D., retired Nov. 25, 1963 from Dept. 48, died April 11. Survived by his wife, Leoma.

SIMPSON—Harold M., retired Jan. 24, 1961 from Dept. 197, died May 9. Survived by a son, George.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Teams Produce Improvements in Plane Designs

(Continued from Page 1)

a piece of wire and a special coaxial cable connector with a standard one of different design. Saving would be 45 per cent.

Team 6 studied an F-111 relay equipment control support assembly and devised a more simplified version that would reduce cost 51 per cent. Team 7 evaluated an F-111 air ejector nozzle duct and found that a nine per cent cost saving could be achieved by fabricating the body of the unit as one piece to eliminate welding.

Team 8 proposed a new design for an F-111 actuator hose guide counterbody inlet control that it believes would perform necessary functions and result in a 90 per cent cost saving.

Everett Lindem, a Dept. 130-3 education specialist, was workshop coordinator and instructor. W. R. Gordon of Dept. 059-0 and Fred Pearce, Tom Boyer and J. J. Wheeler, all of Dept. 561-0, served as advisors for the teams.

Adamson, in his talk at the graduation ceremonies, commended the teams on their results and told them that, with contract awards being based on price, survival of firms in the aerospace industry is going to depend on their keeping costs down.

"We have to all be cost conscious," he said. "With the attitude and ability you are demonstrating, there's no limit to what we can do."

Members of the workshop teams, listed by department, were:

Team 1 — Robert Hinck (captain), 561-0; Tom Allison, 401-0; G. W. Brailsford, Quincy; H. G. Easter, 059-0; D. W. Kuhlman, 144-0.

Team 2 — Maj. C. A. Holland (captain), USAF; Phil Swanson, 561-0; J. E. Turner, 031-0; W. E. Porter, 031-0; Ron Okonski, 532-1.

Team 3 — Maj. C. G. Thompson (captain), USAF; E. E. Andress, 001-0; Dick Greer, 587-0; Vic Shandera, 059-0; B. D. Snow, 420-2.

Team 4 —Hal Wegener (captain), 561-0; P. M. Hallward, 810-0; Del Heltzel, 511-0; F. L. Kany, 400-1; T. E. Kerr, 002-0.

Team 5 — William Douma (captain), 515-3; Ron Baird, 561-0; B. J. Cendali, 810-0; Lew Fischer, 016-0; Fred Lay, 149-0.

Team 6 — L. V. Harrison (captain), 810-0; T. P. Emery, 400-7; Jim McGan, 561-0; H. G. Nulton, 145-0; R. Wasilewski, 511-2.

Team 7 — Capt. W. E. Lounsbury Jr. (captain), USAF; C. P. Glover, 031-0; William Wennhold, 511-0; Richard Zeich, 533-2; Clyde Good, 401-6.

Team 8 — H. S. Jensen (captain), 401-0; Lew Fowler, 532-1; Maj. G. D. Kline, USAF; H. K. Parsons, 031-0; C. F. Richards, 511-2.

Benson Named SAWE Fellow

Raymond L. Benson, chief of mass properties (Dept. 588-0) for Convair, was named a Fellow of the Society of Aeronautical Weight Engineers at its 28th annual technical conference May 5-8 in San Francisco.

Technical papers by five Convair men were presented at the conference.

Benson and Ed Seiden gave a paper on "Airframe cost elements prediction and application to cost control," John E. Niesley on "Launch vehicle weight growth cost effects as determined using a market analysis program," and Willard E. Caddell on "Use of aircraft density in preliminary design."

Ed R. Hood of Convair and John Egan of Tex Johnston Inc. presented a paper on "Balancing a 707 in-flight simulator."

Also attending from Convair were D. L. Johnston, local chapter director, and E. E. Benson, weights group engineer.



ETR SIGNING—Representatives of Convair and the International Association of Machinist Lodge 610, Eastern Test Range sign the new IAM-Convair agreement. Among those present was W. J. Usery, Assistant Secretary of Labor, standing center. Seated, from left are Jim Matthews, president local lodge 610; Robert Duncan, senior business representative; M. V. Wisdom, Convair director of industrial relations; K. E. Newton, manager base operations-ETR. Standing from left are Frank E'Dalgo, grand lodge representative; Freeman Brown, grand lodge representative; Usery; Tom Stevenson, vice president local lodge 610; J. N. Freeman, chief of industrial relations-ETR.

Assistant Secretary of Labor Witnesses Agreement Signing

Assistant Secretary of Labor W. J. Usery was present for the recent signing of the International Association of Machinists-Convair agreement at the Eastern Test Range (ETR).

Usery, a former IAM grand lodge representative, had been on business in the area and had been invited to the signing.

The off-site base agreement at ETR was identical to that at Vandenberg AFB and was an addendum to the main IAM-Convair agreement (**GD/NEWS, April 16**).

Present for Convair were M. V. Wisdom, director of industrial relations; K. E. Newton, ETR base operations manager, and J. N. Freeman, chief of industrial relations at ETR.

Representing the IAM were Jim Matthews, local lodge 610 president; Robert Duncan, business representative; Frank E'Dalgo and Freeman Brown, both grand lodge representatives, and Tom Stevenson, lodge 610 vice president.

First Italian Part Okay

(Continued from Page 1)

usually by ocean freighter, in reusable knock-down-type cartons. Aerfer and Convair-produced panels will be mated into DC-10 fuselage sections at LF and will be flown to the McDonnell Douglas plant in Long Beach aboard an Aero Spacelines "Super Guppy" cargo plane.

Aerfer's Pomigliano D'Arco plant is six miles northeast of Naples and also produces skin-panel sections for the McDonnell Douglas DC-9 and engine pod subassemblies for the Boeing 747 and will produce DC-10 vertical stabilizers.

Mishler said each of the Convair resident office personnel and their families have leased apartments in the same area in Posillipo Alto, overlooking the Bay of Naples and about 19 miles from the Aerfer plant. Their children are attending an English language school for dependents of U. S. government, military and contractor personnel.

Aerfer also operates a large aircraft repair and overhaul facility at Capodichino Airport in Naples.

A TWX communications system operates between Convair's LF plant and the resident office at Aerfer. Because of the time difference, replies to messages dispatched from Aerfer at the end of a work day often are received by the time the following work day begins.

Math Awards Dinner Hosted by Convair

An awards dinner for contestants in the 12th Annual Mathematics Contest was held recently at the Hotel Del Coronado under Convair sponsorship.

After dinner, students heard an address by Dr. Allen B. Altman, assistant professor of mathematics at the University of California at San Diego, followed by presentation of awards to contest winners. Parents of competing students were invited to hear Dr. Altman and attend the ceremony.

S-3A Proposal Earns Praise

(Continued from Page 1)

Aerospace Defense Command's new global mission.

Under future programs, Bowers said the S-3A is the "top goal" but other possibilities in the military aircraft program are the CL-41 as a light trainer and the A-X program.

In maintaining our ability to compete for major space programs, the division is involved in the advanced post-boost system, maneuverable reusable spacecraft and reusable launch vehicles. We are teaming with Grumman (prime), Lockheed and TRW for a proposal on the forthcoming NASA orbital space research and development facility (space station).

Bowers said our triamese reusable launch vehicle-spacecraft concept is being looked at with a great deal of interest by space agencies.

The division also is continuing work on establishing a posture for future vertical and short-take-off and landing (VSTOL/VTOL) aircraft programs.

In summing up his presentation, Bowers noted the influence of outside events on division activity and said Convair is building a firm base in many areas so we have a number of options open for the future.

Mgt. Club Will See Padres-Braves Game

Convair Management Club's annual picnic and ball game is scheduled for July 11. The picnic will be at CRA Missile Park and the ball game at San Diego Stadium.

The game will be between the San Diego Padres and the Atlanta Braves. The picnic and a box seat at the game will be $3.50 for adults and $2.50 for children 12 and under. Tickets will be sold through club boosters.



LOOKING GOOD—F-111 is lauded by Flying Magazine writers in separate articles appearing in May issue.

'Flying Magazine' Writers Cite Outstanding Record of F-111s

The F-111 has an outstanding safety record, and the first production variable-wing fighter is a technical and operational success.

These points were made by John Fricker, European editor of Flying Magazine, in an article, "The People vs. the F-111," appearing in the May issue.

Fricker noted the F-111's crash record "is still the best of any Century-series airplane during flight development." The F-111 lost a total of nine aircraft during the first 15,000 hours of flight, he noted. Comparable records for other in the same period include: 10 F-106s; 14 F-105s; 15 F-102s; 18 F-101s; 21 F-104s and 28-F-100s.

"The escape capsule," Fricker said, "has had 100 per cent success, so far as is known. There is small comfort for the F-111 opposition in its accident record, since there is very little approaching a common pattern in the 11 crashes to date."

Fricker said the F-111 had no significant performance shortcoming and has a low-level capability unmatched by any other aircraft.

The writer pointed out that early problems with the F-111's engine/airframe interface have been worked out. "GD, of course, had to have a powerplant installation to operate satisfactorily between Mach 2.5 above 60,000 feet (for air superiority missions) and a sustained Mach 1.2 at sea level," Fricker wrote, "and Johnson (Dick) says that for all practical purposes, this has been accomplished."

Other problems involving drag and brake buffet are being resolved, he said, and the wing pivot carry-through section is being reinforced.

Fricker said tests have exonerated the F-111's terrain-following-radar system as a cause of the three F-111 crashes during the Combat Lancer program in Southeast Asia. Instead, he said, a spotweld failure in the F-111 tail linkage was the more likely cause.

"This is really what the F-111 is all about," Fricker said of the aircraft's low-level penetration capability. "It is still the only aircraft in military service that has any real chance of under-the-radar penetration against a sophisticated air defense system, through its combination of sustained ultra low altitude supersonic performance and unrivaled automatic fire-control system."

In combat, F-111s carried out 50 radar-bombing missions at night and in bad weather. Fricker quoted Secretary of Air Force Harold Brown as saying the F-111s "did a job that no other aircraft we have is able to do."

Fricker noted that cancellation of the Navy's F-111B has prevented long-term assessment of the "commonality" concept. He concludes that "the TFX concept would have been perfectly feasible technically had it been allowed to have completed its full development."

Concerning the "TFX Investigation," he noted: "No shred of evidence as to partiality among the secretaries ever emerged and even the attorney general's office gave them a clean bill of health."

In a companion article, "The F-111: A Pilot's Verdict," in the same issue of Flying, Executive Editor Richard B. Weegham described his flight in the aircraft.

"From the pilot's seat," he wrote, "The F-111 is a fascinating blend of Bengal tiger and Persian pussy, of demon weapon and sweet-handling dreamship . . . it is the next millennium, with a brimming catalogue of miraculous ideas for flight.

"Better than any other aircraft so far, the 111 has learned to feel as much at home in the tea-room calm of low-speed flight as in the brawling, hairy-chested beer hall world of supersonic war.

"The arc-wing hot-rod with its Rolls Royce handling has opened the door to a new epoch of unbelievable self-reliance in flight . . . From this vantage point, the airplane looks easily able to carry the full weight of early public opprobrium and skepticism and come out technically triumphant and smelling like a bloomin' rose."

Liquid to Fill Gaps in Metal Patented by Division Engineers

Four Fort Worth division engineers have patented a moldable plastic-like liquid which can be used to shim, or fill in, gaps between metal parts.

The product is being manufactured as Dynamold by a Fort Worth firm under exclusive license from General Dynamics.

When Dynamold hardens, it has compressive strength comparable to aluminum and is resistant to cold and heat from minus 65 degrees F. to 420 degrees F. It is also resistant to all lubricants, fuels, paints, salt and solvents.

"We investigated over 60 products—adhesives, sealants, potting compounds and molding plastics—and found none usable for structural shimming," said H. P. Owen, design specialist.

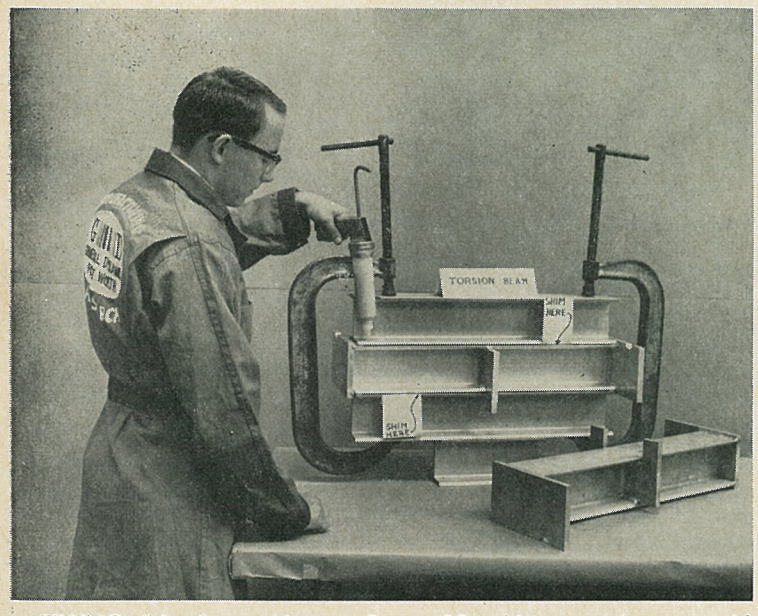
All materials tested failed at high temperature, Owen said.

Dynamold, on the other hand, showed "excellent adhesion" to aluminum, titanium, steel and boron composite.

"One of the main advantages of Dynamold," Owen said, "is that it can be applied as a layer, over rough machined parts. This, of course, eliminates much costly machining and hand-finishing at the detail level.

"In addition, Dynamold can be used effectively to repair parts, where structurally allowable, and to correct tooling economically."

Assisting Owen in development of Dynamold were W. S. Hay, chief manufacturing research; J. W. McNeilly, senior manufacturing research engineer; and J. E. Thomas, senior engineering chemist.



FILLING IN—Steve Naeve, Dept. 23, shims metal parts with Dynamold, GD-patented product with many potential aerospace industry applications.

Scholarships Awarded By General Dynamics

Nine sons and daughters of General Dynamics parents have been awarded four-year General Dynamics - sponsored National Merit Scholarships for use at colleges and universities of their choice.

All are high school seniors with outstanding scholastic, extra-curricular activity, and National Merit test records.

General Dynamics also awarded three National Achievement Program scholarships for deserving Negro students in areas where the Company has facilities.

National Merit Scholarship winners, listed by operating unit in which the parent is employed, are:

CONVAIR

Robert F. Nau, son of Richard A. Nau, manager of reusable space transport systems.

James H. Sylvester, son of James H. Sylvester Jr., assistant site test manager at Cape Kennedy.

ELECTRIC BOAT

Stephen R. Fast, son of Nicholas W. Fast, a program administration engineer.

DYNATRONICS

Bruce H. Antman, son of Martin A. Antman, an electronics engineer.

ELECTRONICS-SD

Karen L. Nicholson, daughter of Richard H. Nicholson, manager of quality control.

FORT WORTH

William B. Cavnar, son of Byron P. Cavnar Jr., an industrial engineer.

Mary Todd, daughter of William C. Todd, an accountant.

POMONA

Steven G. Watkins, son of Edgar L. Watkins, electronics engineering management.

QUINCY

Victor R. Perpetua, son of Americo O. Perpetua, electrical designer.

Robert Nau plans a career as a psysicist and will enter Cornell University's six-year PhD program. He is chairman of a committee to establish an inter-scholastic "Brain Bowl" competition among high schools in San Diego, chairman of a Hi-Y executive board, a member of his school's math team, and a winner of Science Fair and American Chemical Society contests.

James Sylvester plans to enroll in Massachusetts Institute of Technology. He has won numerous local, regional and state Science Fair awards, is an officer of his school's "Brain Team," is an Eagle Scout and junior assistant scoutmaster, is an officer of his school's varsity band and National Honor Society chapter, and has attended a special summer math course at Emory University.

Stephen Fast will study math at Swarthmore College, Pa. He placed first for his school three consecutive years in the national math contest, is business manager for the school yearbook, sings in the school choir, holds a "brown belt" in judo, has competed in local and national blue jay-class sailing races, and served one summer on the campaign team of Sen. Abraham Ribicoff.

Bruce Antman plans to major in math at Princeton. He placed among the top 20 students in Florida in the national math contest, speaks French fluently, has studied in Strasbourg, France, has been team captain of his school "Brain Bowl" team, has served on the student council.

Karen Nicholson plans a career in astronomy and will study physics at University of California at Santa Cruz. She has served as an officer of her school's Heritage Club, has participated in a pilot independent study program, paints as a hobby and has had a self-portrait published in Quest magazine, and is a member of a rowing club.

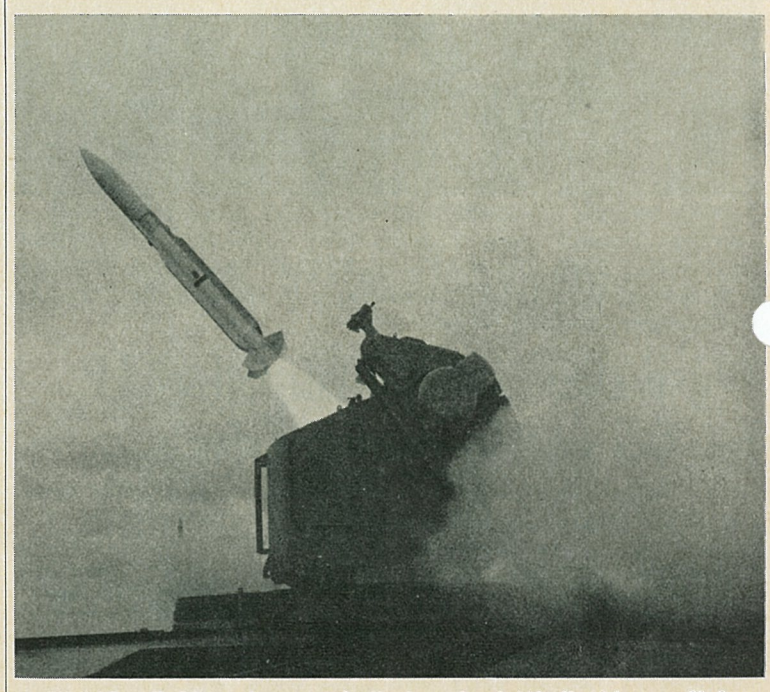
William Cavnar will study physics at Rice University. He has studied several computer program languages, designed and constructed a random-access memory system as a Science Fair project, had historical essays published in several publications, has managed two school basketball teams, has played in a brass combo and the school band, has worked part time in a grocery store and been active in DeMolay.

Mary Todd plans a career as a metallurgical engineer and will study at Michigan State. She has won leadership and scholarship awards three consecutive years, has been president of a Junior Achievement company, is a member of her school's drama and fencing clubs, belongs to a science research group, and has studied art and sung with a folk-singing duo.

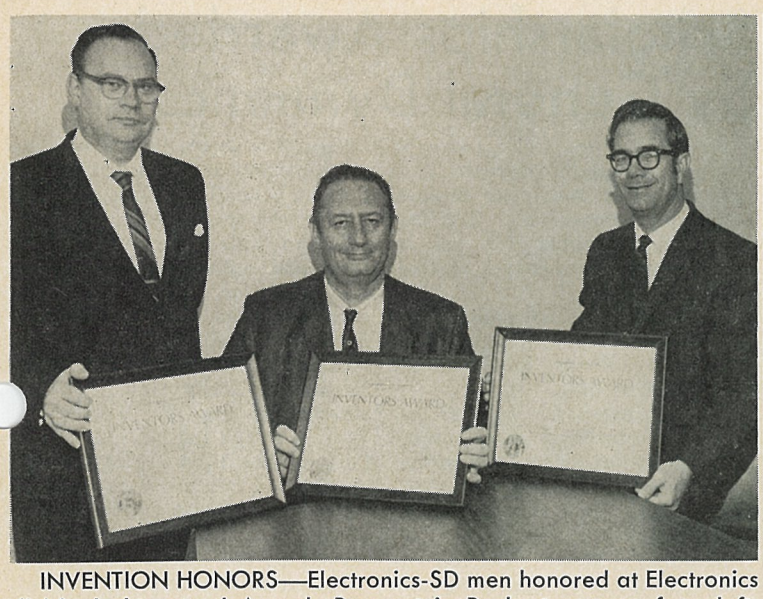
Steven Watkins will study oceanography at University of California at San Diego. He has attended the summer National Science Foundation program at Humboldt State College, is president of his school's Interest Club, has been a member of the California Scholastic Federation three years, has earned school letters for water polo and swimming, is president of a church youth group, hikes and pilots a sailboat he built with proceeds from a paper route.

Victor Perpetua plans to study physics at Harvard. He was a regional Math Fair finalist, is a member of his school's math and physics clubs and honor societies, plays in the school and Needham Summer Concert bands, has played on school soccer and tennis teams, and has held after-school and summer jobs.

Recipients of the Achievement Scholarship were Sylvester J. Gates of Orlando, Perry W. Allen III of Fort Worth, and Ronald S. Fontenot of Chicago. All have won numerous scholastic honors and are planning engineering or computer systems careers.



FIRING AT SEA—Pomona-built Standard Missile blasts off from launcher aboard USS Hoel (DDG-13) in recent test at sea.



INVENTION HONORS—Electronics-SD men honored at Electronics division's Inventors' Awards Banquet in Rochester were, from left, John B. Gehman, James W. Crooks, and Ray M. McIntyre. Nine other Electronics-SD personnel also had inventions patented last year.

Electronics-SD Inventors Among Nine Earning Division Honors

Three Electronics-SD engineers were honored with award checks and citations for outstanding inventions May 6 at Electronics division's third annual Inventors' Awards Banquet at Oak Hill Country Club in Rochester, N.Y.

John B. Gehman, an engineering staff specialist working on advanced radar, navigation and security systems, received a $500 award and citation for his development of the sensitive WEED intrusion detector.

James W. Crooks Jr., an engineering staff specialist whose principal field is high-precision aerospace tracking systems, and Ray M. McIntyre Jr., a design specialist and supervisor of the antenna and microwave group, divided a $500 award and received citations for their invention of a broadband feed for the large "dish" antennas aboard the Apollo Instrumentation Ships.

Gehman, Crooks and McIntyre were among nine Electronics division engineers receiving awards at the banquet. John O. Bowers Jr. of the Dynatronics operation in Orlando, Fla., received the special $1,000 "Inventor of the Year" award for three inventions, including a field-effect transistor that will be used in telemetry equipment to be planted on the moon's surface by Apollo 11 astronauts.

Albert G. Daubert, Electronics division general manager, presented each of the awards and citations. Officials attending included Roger Lewis, president of General Dynamics; Algie A. Hendrix, Corporate vice president; D. C. Prim, Electronics-SD manager.

Other Electronics-SD personnel with inventions last year were Merit R. Arnold, James Boelens, Harold T. Buscher, Robert J. Grove, James Nilles, E. L. Rope, Albert Roth, John L. Souza, and Gus P. Tricoles.

Convair Men Assume Toastmaster Posts

Convair employes were elected to the two top posts of District 5 Toastmasters at its annual spring conference.

Durwood English, Dept. 195-2, was elected District Governor and H. O. (Hall) Story, Dept. 149, senior lieutenant governor. About 50 Toastmasters clubs in San Diego and Imperial counties and Yuma, Ariz., are included in the district.

EZ DUZIT



"BIG NICKEL" WINNERS—Convair C-5 Empennage program employes recently were cited for cost reductions of $62,384. Representing Depts. 019, 045 and 202 (from left) are: R. L. Patrick, R. V. Lucero, C. L. Smith, R. Maddox, I. D. Howarter, J. T. Kucala, A. M. Lopez and J. D. Volkov.

'Big Nickel' Awards Earned at LF For C-5 Cost Reducing Efforts

Group efforts on Convair's C-5 empennage program resulting in $62,384 savings brought "Big Nickel" awards to three departments recently.

Depts. 019, 045, and 202 were recognized by the Lockheed award instituted by Convair early last year to cite empennage program oriented cost reduction ideas.

"During the past quarterly period the departments named contributed more than 50 per cent of total cost reductions," said Bob Miller, C-5 program manager.

Convair's original subcontract with Lockheed-Georgia company called for 58 shipsets of empennages which was followed early this year by a follow-on order for 57 additional tail sections.

Number of 100% Bond Buying Depts. Climbs

As of late last week the following departments were reported at 100 per cent participation in the U.S. Savings Bond Drive:

Depts. 027-1, 055-0, 102-0, 105-0, 110-0, 140-1, 140-2, 141-0, 141-2, 141-4, 143-0, 143-1, 144-0, 144-1, 149-1, 190-0, 197-0, 199-0, 200-0, 202-0, 202-3, 204-0, 506-0, 506-1, 506-3, 506-4, 509-0, 513-0, 516-1, 518-9.

Depts. 520-0, 520-1, 526-0, 529-0, 551-0, 551-1, 553-0, 553-3, 554-0, 562-0, 562-2, 567-0, 567-1, 567-2, 570-1, 572-2, 572-4, 574-2, 574-3, 574-5, 575-0, 575-2, 578-0, 578-1, 579-0, 580-3, 581-3, 581-5, 581-6, 582-0, 800-0, 802-0, 860-0.

Depts. 950-1, 950-3, 950-5, 954-0, 954-3, 954-4, 960-0, 963-1.

Depts. 403-1, 403-3, 403-4, 450-0, 451-0, 453-0, 491-0, 700-0, 744-0, 759-0, 763-0, 830-0, 834-1, 780-0, 203-0.

In addition, an assembly subsection with 115 persons in Dept. 027, F-111 assembly, Plant 19, reported 100 per cent sign-up.

$2,000 Awards Shared by Trio

Three Convair employes were presented $2,000 in cash awards at a May 15 awards luncheon of the 1969 Casting Exposition and Conference in Long Beach.

The awards were given to Harry Warn, Dept. 820-0 ($1,000), Duane O. Gerde, Dept. 561-0 ($500), and Ernest A. Baddams Dept. 531-2 ($500), for their contributions in developing a revolutionary steel casting for aircraft application.

At the same time, Convair division was presented the Creative Achievement Award for initiating development of the casting for which the men were honored.

The new technique represents a technical advance in producing precision aircraft castings. The application for which the awards were given involves production of F-111 wing pylons on which fuel tanks or armament are mounted.

Electronics-SD Club Will Hear USC Prof.

"Effective Use of Our Minds" will be discussed by Dr. John R. Van de Water, a USC professor and management consultant firm president, June 11 at a meeting of the Electronics-SD Management Club in the Atlantis Restaurant.

Tickets for the meeting, which will begin at 6:30 p.m., are available through all club boosters.

Van de Water was a UCLA faculty member for 20 years and now is adjunct professor of industrial relations and management for the USC Graduate School of Business Administration.

In his address here, Van de Water will show how the individual can become more creative through effective thinking and planning.

Club Plans Announced For 'Quadrastar Special'

Plans are being completed for Convair Management Club's "Quadrastar Special" June 11 in the Bahia Hotel.

Highlighting the four-star event will be an address by Fritz Hauf of Lakeside Bridge and Steel Co. of Milwaukee, president of the National Management Association; presentation of four $500 scholarships to employe children; presentation of annual club awards, and installation of new Management Club officers.

Jack L. Bowers, Convair general manager, will be executive sponsor for the meeting, last of the 1968-69 club year. Special light and sound techniques will be employed for a unique meeting format.

Wives and guests will be invited. Tickets will be on sale through club boosters.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Could Convair offer a defensive driving course after working hours?

A—In order to conduct such a course, Convair would have to hire a professional instructor. Employes interested in such instruction should turn to one of the many driving schools available.

★ ★ ★

Q—Last year engineering department hours were changed because of daylight savings time. Will we do that again this year?

A—The change in engineering start times last year was not related to daylight savings time. The KM and LF engineers were on different schedules and the change was in the interest of standardization. No change in time is contemplated this year.

★ ★ ★

Q—Bldg. 33 at KM has two outside telephones, approximately six feet apart, and with no real protection against weather. Would it be possible to have old fashioned booths, or phones inside?

A—Phone equipment in this case is the latest type offered for outdoor stations. The old type booths presented a maintenance problem and had to be cleaned frequently. Inside phones are not desirable because of congestion of persons waiting to use them.

★ ★ ★

Q—During heavy rainfall, water collects in a pool at the entrance to the Marine Technology Center on Harbor Drive. When driving through it, water soaks brake drums creating a safety hazard. Could a drain be installed?

A—The area in question is on Port District property and the district has been requested several times to correct the grading. The deep water occurred during the record February rainfall and is not a frequent problem. However, it should be corrected and we will make another attempt.

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Q—In this computer age, why does it take Bankers Trust until late March to prepare year end statements for members of the Savings and Stock Investment Plan?

A—The Liquid Carbonic sale and stock transfer was the prime cause this year. However, even in a normal year input from divisions is not due until Jan. 20 for posting to individual accounts and several weeks are required thereafter to process the data.

★ ★ ★

Q—Now that non-professional and union-represented personnel have received new fringe benefits, are we going to improve them for salaried, and if so, when?

A—Yes, as reported in Convair Notice 9-22. Copies are available at employe benefits offiice.

Sipie's Trio

Convair Painter Looks Back Upon Long Night Club Musical Career

Colorful words like "speakeasy," "Bourbon Street," "vaudeville" and "John Dillinger" hold special meaning for Sipie Martinez, a Convair painter in Dept. 002.



THEN AND NOW — Convair painter Sipie Martinez, Dept. 002, holds photo showing himself at age 22. Martinez has been professional musician for 35 years.

As a professional musician, he has been playing saxophone and clarinet and doing comedy routines for more than 35 years, most of them with his own "Sipie Martin Trio." (Martin is his stage name.)

Born in Chicago, Sipie started in show business there at age 14, dancing and playing on the local vaudeville circuit.

From the windy city he moved to Cicero, Ill., home of many infamous gangsters of the Prohibition era. Here Sipie and his trio played in speakeasys, including a stand in one that was a popular "watering hole" of John Dillinger and other mobsters.

Over the years Sipie has enjoyed top billing in many major nightclubs in both New York and Chicago, writing his own musical arrangements for piano, drums, sax and clarinet.

Sipie later took his "axe" and "licorice stick" on an eight-year tour of the U. S. and Canada. The touring musician entertained audiences in such places as Montreal, New Orleans' Bourbon Street, New York's Broadway, and Los Angeles.

Building their musical repertoire, Sipie's trio performed a wide range including Latin, Bossanova and Dixieland.

"Jam sessions" with several famous musicians and bands mark nostalgic high points in Sipie's career. Such names as Count Basie, Lionel Hampton and Duke Ellington are among the familiar names in his past.

Joining the famous Dorsey Brothers Orchestra in 1957 Sipie toured with them for a year before retiring from full-time entertaining. He came to work at Convair in 1958.

The Sipie Martin Trio is not gone, however. It still plays locally on night and week-end bookings. Sipie's original drummer, still with him, is a Convair assembler, Ray Sanchez, Dept. 020. Convair special assignment man, Guy Rhea, Dept. 019-0, recently signed on as the group's guitarist.

Registration Set Next Week For In-Plant Summer Courses

Convair educational services offices will take registration next week for eight summer session courses to be offered in-plant through San Diego Evening College.

The summer session will run from June 30 through Aug. 22. Cost will be $1.00 for Associated Student membership plus textbooks and related materials.

Courses to be offered, meeting times, plant locations, and instructors are:

Industrial Technology 3 — 4 to 7 p.m. Mondays and Wednesdays, LF, Cy Goodman.

Related Technical Math 40 — 4:30 to 7:30 p.m. Mondays and Wednesdays, KM, Mike Hurley; 4 to 7 p.m. Tuesdays and Thursdays, LF, Ed White.

Effective Speaking (Supervision 28) — 4 to 7 p.m. Tuesdays and Thursdays, LF, Will Wiedenfeller; 4 to 7 p.m. Tuesdays and Thursdays, LF, Hal Rubin.

Effective Writing (Supervision 23) — 4:30 to 7:30 p.m. Mondays and Wednesdays, LF, Bill Burris.

Human Relations (Supervision 20b) — 4 to 7 p.m. Mondays and Wednesdays, LF, Dave Chigos.

Blueprint Reading (x80) — 4 to 7 p.m. Tuesdays and Thursdays, LF, Ernie Chavez.

Supervision courses listed are among 10 required for the Certificate in Supervision.

University of California Extension also will offer five summer in-plant courses, all taught by Convair personnel and all at the KM plant. Fee for each will be $60.

These courses, meeting times, and instructors are:

Introduction to Management Sciences — 5 to 8 p.m. Mondays and Wednesdays, June 23 through July 30, Glenn G. Rosbrook.

Introduction to Information Processing and Computer Programming — 5 to 8 p.m. Tuesdays and Thursdays, June 24 through July 31, John A. Hicks.

Leadership Principles and Practice — 5 to 9 p.m. Fridays and 8 a.m. to 5 p.m. Saturdays, June 20 through July 19, David K. Chigos.

Computer Programming — 5 to 8 p.m. Tuesdays and Thursdays, June 24 through July 31, Frederick D. Schwend.

Design and Implementation of Business Systems for Computers —5 to 8 p.m. Mondays and Wednesdays, June 23 through July 30, Charles K. Twohey.

Several of these courses require successful completion of prerequisite courses, equivalent related experience, or consent of the instructor for enrollment.

Delta Divers Plan Trip to Baja Calif.

CRA Delta Divers are planning a trip to Baja California for Memorial Day. Their destination is Punta Rancho Cabras at the kilometer 181 turnoff on Highway 1.

On a recent trip south of San Felipe, Hal Reeser caught a 78 lb. grouper and a 58-lb. red snapper. Larry Blackburn caught two groupers weighing 70 and 75 lbs.

Trophies were presented at the April meeting for the largest fish, lobster and abalone. Winners included Al Jones, Bob Mitchell and Loren Batchman.

New club officers are Loren Batchman, president; Jim McGinnis, vice president; Claire Swan, secretary; Phil Swanson, treasurer.

Worthington Wins Pistol Competition

CRA Pistol Club shooter Bill Worthington's 270-3x outscored Expert competition in May 11 matches at police range. L. Thomas took second with a 266-3x tally.

Other classes and results were: Masters — Don O'Brien, 290-9x, Jim Halfacre, 289-9x, second; Center Fire — O'Brien 270, Roland Schneider 262, second, Halfacre 253, third, Warren Walker 230, fourth; Sharpshooter — Bud Robinson 246, Veronica O'Brien 170, second.

Next match and training class are June 8 at police range. Class is at 10:30 and match is 9:15 a.m.

New Trail Bike Club Planning Expedition

First outing of the newly formed CRA Trail Bike Club will be Saturday, June 14.

The group will meet at 9 a.m. at the rest camp east of Boulder Oaks near Cameron Guard Station on Highway 80. Trail master for the 25 mile ride will be Pete Woodrum. Interested persons may call Colleen Woodrum, ext. 3211 KM, for information.

The club will have regular meetings every third Thursday at 7 p.m. in the CRA Clubhouse.

ROGER FREEDMAN WINS SCHOLARSHIP FROM UCSD

Roger A. Freedman, son of Richard A. Freedman of Convair's Dept. 962-8, has received a four-year Chancellor's Scholarship from the University of California, San Diego.

Bargain Tickets

Tickets are available at all CRA and employe benefits outlets for the following upcoming events:

The Flying Royal Lipizzan Stallions at the San Diego Sports Arena, Sunday June 8 at 7 p.m. Prices are $4 for $5 seats and $2 for $3 seats.

"Oliver" at the Valley Circle Theater, Sunday June 1 at 8:30 p.m. Price is $2.40 for a $3 seat.

The Southern California Exposition at the Del Mar Fairgrounds from June 25 through July 6. Tickets are $1.25 for adults and 50 cents for children under 12.

Mgt. Club Schedules Annual Day at Races

Convair Management Club's annual "day at the races" has been scheduled for June 15 at Caliente. A margarita cocktail hour will be held at noon, followed by a buffet luncheon at 1 p.m.

Reduced-price tickets at $2 each are available through club boosters.

Mike Allianelli of the Management Club's social tours committee said the Turf Club has asked attending members to wear normal street attire (men with coats and ties, dresses for the ladies).

Auction for Juniors Planned by Coineers

Convair Coineers will have a special auction for juniors at 7:30 p.m. June 9 at the CRA Clubhouse.

Featured will be coins that would appeal to people just starting collections. No charge will be made for lots entered in this auction. The regular auction will be after the meeting.

Theme of the meeting will be U. S. nickels. Bill Wright and Jim Heine will speak and show slides on oddities and errors in coins. Refreshments will be served, door prizes will be given, and a drawing will be held.

Convair Leadwoman Plays Theater Role

Tyler Winn, Dept. 954-3, is now appearing in the lead role in "The Killing of Sister George" at the Cassius Carter Centre Stage, adjacent to the Old Globe in Balboa Park.

Tyler's last role was ten years ago as Eunice in "A Streetcar Named Desire" at the Old Globe for which she won an Atlas, the Old Globe's version of the Oscar.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is June 3. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Sierra San Pedro Matir weekend, May 30-June 1.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS—Meeting June 5, 7:30 p.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m.

CHORUS—Rehearsals 7:30-9 p.m., Wednesdays, Recital June 22, Madison High School auditorium.

COINEERS—Auction for juniors, 7:30 p.m., meeting, 8 p.m., June 9.

DELTA DIVERS—Trip to Punta Rancho Cabras, Baja Calif., June 30-May 1. Meeting, June 11, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting June 4, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Cottonwood tournament, June 21-22.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting, June 10, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Highway 80 (Interstate 8) and Lake Murray Blvd.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot June 8, 9:15 a.m., SD Police Pistol Range, Federal Blvd., and Home Ave.

RADIO CLUB—Meeting June 5, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting June 11, 7:30 p.m.

RIFLE CLUB—Junior shoot, 1 p.m., June 7; Senior shoot, 7:30 p.m., June 11; Gillespie Field Range.

ROCKHOUNDS—Meetings June 11, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting June 3, 8 p.m., South Bay Club.

SPORTS CAR CLUB—Meeting June 11, 7:30 p.m., Convair executive dining room, Lindbergh Field.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting June 12, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays 10 a.m. to 4 p.m.

TENNIS—Tournament to begin June 7, at Mesa College and Morley Field.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS—16-day Caribbean Carousel, July 19-Aug. 3.

TRAIL BIKE CLUB—25-mile ride, June 14, 9 a.m. Meeting June 19, 7:30 p.m.

TRAILERS—Meeting June 3, 7:30 p.m.

TROPICAL FISH—Meeting and workshop Mondays, 7:30 p.m.

WIVES—Membership tea, 1 p.m., today May 28.

Tennis Tourney Begins June 7

A CRA and Convair Management Club-sponsored summer tennis tournament will begin June 7 with matches at Mesa College and Morley Field courts.

Events will include men's singles and doubles in novice, intermediate, and advanced classes; women's singles in novice and intermediate classes, and mixed doubles.

Contestants will be notified of time and place each Thursday prior to the weekend of play. Fees will be 50 cents per event.

The schedule is: June 7-8—men's novice and advanced singles; June 14-15—men's novice and advanced doubles; June 21-22—men's intermediate and women's intermediate singles; June 28-29—men's intermediate doubles and women's novice singles; July 12—mixed doubles.

Entry deadline is Wednesday before the scheduled play date. For additional information, call Cecil Norwood, ext. 3439 KM; Mike Griggs, ext. 2367 KM, or Bob Herold, ext. 2360 KM.

Health Club Hours Begin at 9:30 a.m.

The Health Club is open from 9:30 a.m. to 10 p.m. Monday through Thursday and until 9 p.m. on Friday. During these days it is open for women only from 9:30 a.m. to 11 a.m.

Saturday the club is open for all members from 10 a.m. to 5 p.m.



SEA WORLD SIGHT—Sight such as this doesn't occur very often, but there will be many more just as eye-catching when General Dynamics "Sea World Days" take place June 7 and 8. Tickets at subtantially reduced rate are available while they last.

Adventurers Plan 3-Day Outing In Rugged Baja Calif. Mountains

CRA Adventurers have planned a three-day outing this weekend (May 30-June 1) in the rugged Sierra San Pedro Martir about 205 miles south of the border in Baja California.

The group will rendezvous and have lunch at noon Friday at the Meling Ranch cutoff eight miles south of Colnett, then will drive 47 miles over a dirt mountain road to Mike's Sky Rancho.

Four-wheel-drive vehicles and trucks then will transport the group and their gear 2½ miles over a jeep trail. The campsite will be at the 4,000-foot level along the Rio San Rafael, where the group can fish for trout and will have ample water and firewood.

After a pancake breakfast Saturday, a 20-mile trip will be made in four-wheel-drive vehicles to the new Mexican National Observatory site at 9,200-foot elevation at Cerro Venado Blanco.

Special permission has been obtained from the University of Mexico for entry into this area, which is closed to the public. Lunch will be served at the summit, from where one may see both the Gulf of Mexico and the Pacific Ocean. A fish fry is scheduled at 6:30 p.m. around the pool at the Sky Rancho.

Trucks will shuttle the group back to the Sky Rancho Sunday morning.

Ray Madden and Dick Bowen will be trip leaders. A charge of $2 for adults and $1 for children will be collected by the club, which will provide breakfast and dinner on Saturday.

Tourist permits will be required and can be obtained without charge from the Mexican Consulate, 1007 Fifth Ave., by showing proof of citizenship. Mexican auto insurance also is recommended.

Phone Bowen, 278-9846, for additional information.

June 22 Concert Planned by Chorus

The General Dynamics Chorus will present a free concert from 3 to 5 p.m. June 22 at Madison High School.

Any individual interested in joining the chorus can do so by attending rehearsals from 7:30 to 9 p.m. Wednesdays in the CRA Clubhouse.

Timber Jets Win Handicap

Timber Jets and Misfit Srs. won men's and mixed team events, respectively, in CRA's recent 28th annual handicap bowling tournament to take home top team trophies and cash awards.

Bowling for Timber Jets were Jim Hayman (captain), Paul Hayman, Lee Button, Vic Bards and Buzz Prettyman and for Misfit Srs. were Mike Brooks (captain), Bill and Evelyn Carson, and Bud and Charlotte McLaughlin.

Runner-up men's teams, also splitting cash awards, were San Diego Royals and Low Rollers and for mixed teams were The Tigers and the Oh-No's.

Others taking home both trophies and cash awards were Lee Sperandio and Spar Sperandio, mixed doubles winners; Paula Prettyman, women's singles winner; Denise Briles, women's all events winner; A. V. Black and Morlie Brown, men's doubles winners; Bob Feeney and Tom Palmer, tie for men's singles win, and Buzz Prettyman, men's all events winner.

Trophies for the women's doubles win went to Denise Briles and Verna Burton.

Cubs Sign Convair Son as Pitcher; College Studies Part of Contract

There's at least one proud San Diego father who won't be pulling for the home team this baseball season — Convair assembler Ignacio Bracamontes, Dept. 045.

His son, Ignacio Jr., 18, recently signed a pitching contract with the National League Chicago Cubs.

Ignacio Jr. probably won't see major league action for awhile, however. He is attending school (as part of his contract) at Southwestern College in nearby Chula Vista, where he hurled his team to a second place finish in the Pacific Southwest Conference, winding up with an 8-4 record and 1.33 ERA. He will report each summer to the Cubs' rookie camp at Caldwell, Idaho.

Young Bracamontes, who batted .373 as a high school senior, has received accolades from sports circles throughout his playing career, which began in Little League. His latest honor came in 1968 when he was named to the all-star first team of the California Interscholastic Federation (CIF).



VALUE PANEL—General Dynamics' Value Control Panel and guests met recently in San Diego with P. I. Harr, right, Corporate director of reliability, quality control and value control. Others, clockwise from Harr's left, are H. D. Filloon, Pomona; Q. R. Creasy, Fort Worth; R. C. Hinck, Convair; Glenn Bancroft, Convair; H. P. Williams, Convair; Harley C. Witham, Wright-Patterson AFB; C. W. Doyle, Fort Worth; Saul D. Leppen, Electronics-S.D.; Karl K. Mikelsons, Canadair; Ralph I. Morse, Electronics-Rochester; E. D. Heller, Convair; Frank H. Bellew, Electric Boat.

Computerized 'Idea Bank' Proposed For Value Control Information

General Dynamics' Value Control Panel in a meeting last month in San Diego reviewed work of its members on special projects, discussed mutual problems and planned future panel-sponsored activities.

Several small "workshop sessions" were held during the day.

Panel members have been developing a Value Control Standard under which each General Dynamics operating unit may evaluate and seek to improve its performance. The Standard has been undergoing a series of tests and will be evaluated at the panel's next meeting to be hosted by Canadair, Ltd. Oct. 2-3 in Montreal.

Efforts also are continuing on establishment of a central computerized "idea bank" that would receive input from divisions or other operating units that might be of future benefit to others.

Among other items discussed was possible need for a VE handbook or supplement and VE materials included in the Management Upgrade Supervisory Coaching Series.

H. S. Wurtz, contracts manager for Convair's Kearny Mesa plant, joined the panel for a discussion of problems associated with value engineering change proposals.

R. H. Nicholson, Electronics-SD quality control manager and chairman of the General Dynamics Quality Control Panel, also met with the group to discuss joint participation in an October meeting in Washington.

Harley C. Witham, staff value engineer for the U.S. Air Force Aeronautical Systems Division at Wright-Patterson AFB, Ohio, also was a guest.

Ralph Morse of Electronics division is Value Control Panel chairman. Karl Mikelsons of Canadair is vice chairman and secretary.



QUALITY THE TOPIC—Meeting at Quincy division to discuss new policies, methods and findings in Quality control was team of Corporate-wide specialists: from left, P. I. Harr, Corporate director of reliability, quality control and value control; R. H. Nicholson, Electronics-SD; Q. E. Gilmore, Convair; J. Y. McClure, Fort Worth; M. L. Curland, Electric Boat; F. H. Rack, Quincy (host for session); R. C. Stevens, Stromberg-Carlson; J. R. Vencill, material service; L. I. Medlock, Convair; G. H. Schwab, Canadair; E. F. Trainor, Quincy; H. J. Stuart, Pomona.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

EVERETT R. HOLLES from Electronics, Rochester to Corporate Headquarters as director of public relations; **RONALD BARTER** (1968) from Electric Boat division to Stromberg DatagraphiX as customer engineer; **JESSE C. PERRY JR.** (1951) from Convair to contract estimating specialist, Pomona; **DONALD CARLSON** (1959) from Electronics (Electro Dynamic) to Electric Boat as manager of compensation; **IAN A. EATON** (1956) from Convair to Quincy; **THOMAS G. FLEMING** (1952) from Convair to Electronics-SD as logistics manager; **CHARLES H. COLEMAN** (1960) from Quincy to contract change engineering specialist, Electric Boat; **JOHN J. MURPHY** (1948) from Convair to engineer, Electronics-SD; **HENRY C. RAPTIS** from Electronics, Rochester to senior electronics engineer, Convair; **EDWARD J. CORRIGAN** (1962) from Electric Boat to Canadair, Ltd. as section chief; **GEORGE L. KING** (1967) from Electronics-SD to Convair as engineering drawing checker; **KENNETH L. MONTGOMERY** (1957) from Convair to systems specialist, DatagraphiX; **GEORGE E. MANESS** (1968) from Electric Boat to customer engineer, DatagraphiX; **DANIEL CONNOLLY** (1962) from Stromberg-Carlson to Quincy; **RONALD R. GAY** (1962) from Electronics-SD to DatagraphiX as administrative accountant; **LESTER A. RANDOLPH** (1966) from Electric Boat to project coordinator, Fort Worth; **BERNARD J. EARLY** (1967) from Electronics-SD to senior buyer, DatagraphiX; **JERRY L. HOOLEY** (1966) from Convair to DatagraphiX as product planning specialist; **JOHN D. WIEGMANN** (1966) from Electric Boat to cost estimating engineer, Quincy; **RICHARD W. McGUIRE** (1955) from Convair to Stromberg-Carlson (Charlottesville, Va.); **DONALD R. ROLFE** (1963) from Electric Boat to customer engineer, DatagraphiX; **FARRELL L. PATTON** (1959) from Convair to Quincy; **DAVID R. SMITH** from Stromberg-Carlson (Camden, Ark.) to manager of personnel relations, DatagraphiX.

Dynamics Plants Will Close May 30

General Dynamics divisions and subsidiaries will observe Memorial Day, May 30.

Except for necessary security and maintenance functions, plants will be closed Friday, Saturday, and Sunday. Regular work shifts will resume Monday, June 2.

Product Assurance Hosts Two Meetings With 82 Attending

Fort Worth division's product assurance department hosted two major meetings recently.

One was the Semiconductor Fact-Finding Conference; the other, the Defense Electronic Supply Center (DESC)-Military Service/Industry Transistor Working Group meeting.

A total of 82 attended the fact-finding session, including representatives from military services and users and manufacturers of semi-conductor devices.

Papers at the meeting included two by General Dynamics men.

M. A. Frost spoke on "Future Air Force Weapon System Requirements and Their Impact on Lower-Tier Requirements."

"The Navy Approach to Parts Requirements" was given by M. D. Dickey, Convair division.

STAR II Dives in Pacific For Underwater Photos

STAR II, one of Electric Boat division's two-man submersibles that operates out of the General Dynamics' Marine Technology Center in San Diego will be featured in one of the future ABC-TV network specials on "The Undersea World of Jacques Cousteau."

STAR II, piloted by Lou Fead, recently spent three days operating with Cousteau's ship Calypso and his "Sea Flea" one-man photo submarines at Emerald Cove and Isthmus Cove at Santa Catalina Island off the Southern California coast.

Fead said STAR II was photographed cutting a ⅝-inch cable with its explosive cable cutter, lifting test-rig structures from the ocean bottom to the surface, using its manipulator for various tasks, and operating in a kelp bed in demonstrating its maneuvering capability and visibility.

Four daylight and one night diving operation were filmed. One of Cousteau's French motion picture photographers was with Fead aboard STAR II during the Isthmus Cove dive to check wreckage of an old ship on the ocean floor. Cousteau's mini-subs also were "on the bottom" to film STAR II as it maneuvered around the sunken hulk.

Millions of viewers are expected to see the TV special, being produced by Cousteau and Warren Busch of Metro Media Productions Corp., when it is shown late this year or early in 1970.

The 10,000-pound STAR II, which operates at depths to 1,200 feet and maneuvers at 1 to 3 knots, was transported to and from the film location aboard the off-shore supply vessel Search Tide.

Four other Electric Boat men from San Diego—Jim Childs, Mike Ida, Manfred Krutein, and Jim Bonney—assisted as crewmen for the STAR II operations.

Charles DeMund of Convair's motion pictures and TV section and Roger Jett of Convair's still photo section also filmed some of the surface and underwater operations. Ray McPhee of General Dynamics Corporate Headquarters handled overall coordination with Metro Media Productions.

Fead recently had returned from England where he managed the STAR III submersible in April on dives for inspection of submerged portions of an off-shore gas field platform in the North Sea under contract with Divcon Inc. of Houston.

Two other STAR Program pilots from Electric Boat in Groton, Bob Hill and Gene Rodgers, assisted and Bill DeCourt from the Marine Technology Center in San Diego served as photographer.

STAR II has been used on several Divcon search and recovery operations in California's Santa Barbara Channel, including locating and assisting with recovery of SNAP 19 generators from wreckage of the Nimbus B weather satellite last year.

F-106s Join Search For Plane Downed By N. Korean MIGs

Convair-built F-106 fighter aircraft from the 71st Fighter Interceptor Squadron at Osan Air Base, Korea, played a vital role in search operations last month after a U.S. EC-121 reconnaissance aircraft was attacked by North Korean MIGs and crashed into the Sea of Japan.

The 71st, based at Malmstrom AFB, Mont., but now on six months temporary duty at Osan, provided armed escort for surface vessels and aircraft participating in the search, was on the scene when wreckage of the downed plane was discovered and continued to provide protective cover until rescue efforts were terminated.

Pilots from the squadron logged more than 300 hours in the air during the five-day search mission, including 125 hours during the first 24-hour period. Average flying time per pilot was more than 13 hours.

The F-106 operations included in-flight refueling at night in adverse weather, close-formation flying under the same conditions, and working beyond the range of friendly radar and radio contact.

Lt. Gen. Thomas K. McGehee, 5th Air Force commander, has commended the squadron for outstanding performance.

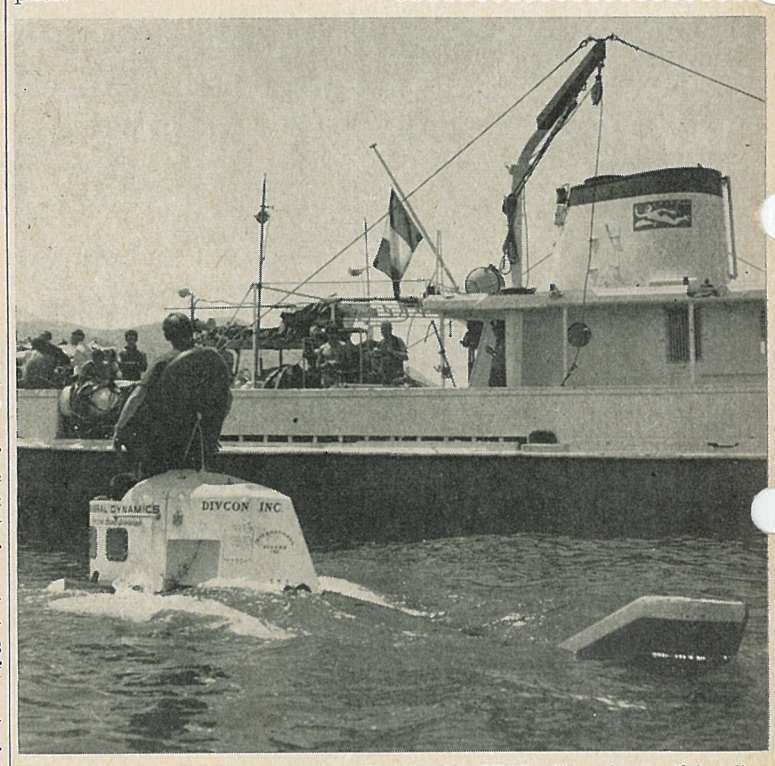
Security Mgr. Speaks At Toronto Meeting

I. B. Hale, Fort Worth division manager of industrial security, was a speaker at the 50th International Conference of the Administrative Management Society in Toronto, Canada, May 11-14. His subject was "Plant and Physical Property Protection."

LOGISTICS SOCIETY TO HEAR McGUFFEE

R. W. McGuffee, Fort Worth division director of manufacturing, is scheduled to present a paper, "Logistics Field Data for Measurement/Evaluation," at the Society of Logistics Engineers Convention at Cape Canaveral Sept. 9 and 10.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

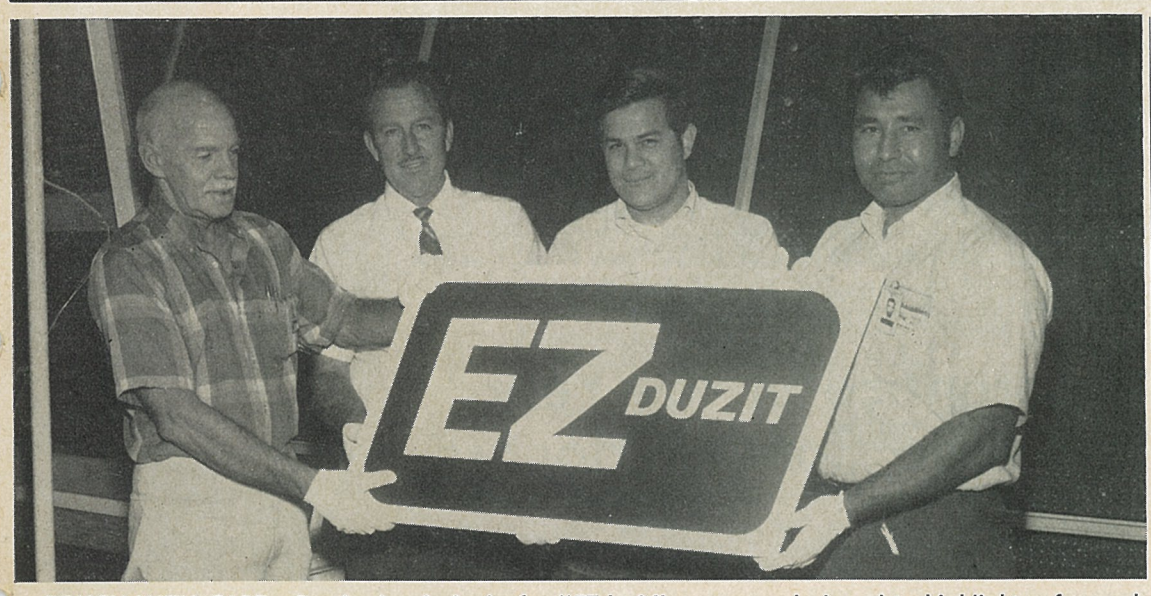


TV 'STAR'—Electric Boat division's STAR II submersible lies alongside Jacques Cousteau's oceanographic ship Calypso during recent filming of special program for ABC-TV off Catalina Island. Lou Fead, STAR II pilot, is standing in hatch. Cousteau, wearing traditional stocking "diving cap," can be seen talking with members of his crew aboard Calypso.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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TOUCH WITH CARE—Previewing insignia for "EZduzit" program, designed to highlight safeguarding Convair fuselage skins for DC-10, are, from left, William Petty, Dept. 002 leadman; H. B. McIntosh, factory specialist; Richard Romero, Dept. 002 production painter; Edward Angulo, Dept. 149-5 process inspector.

EZduzit Program Goes Into Operation To Highlight Careful Skin Handling

Convair division this week is instituting "EZduzit," a new program calling attention to the need for extreme care in producing perfect, mirror-finish, premium-quality fuselage skins for the McDonnell Douglas DC-10 tri-jetliner.

"Our EZduzit goal is to eliminate all rejects, rework, and scrap in the DC-10 program," Jack Hurt, DC-10 program manager, commented. "It will help us achieve our objective of delivering DC-10 fuselage skins that will be the prettiest in the sky, on schedule, without a scrape or scratch, and at lowest possible cost."

Hurt said the DC-10 skins will be the most expensive on which Convair has ever worked.

"Their value will increase more than 15 times as they move through the Lindbergh Field plant and are formed, chemically treated, drilled, welded, and assembled," he said.

"Damage to a single skin from lack of skill or attention can cost us thousands of dollars."

EZduzit will be a special adjunct to the Convair Craftsmanship Program and will be emphasized in every aspect of DC-10 material handling.

New handling equipment and tools are being designed and built and new processes and protective covering methods instituted for the costly skins. Inspection procedures also are being reviewed and changed as needed.

A DC-10 skin quality committee, under the chairmanship of Jess Cook, and a material handling surveillance committee, under the chairmanship of Dale Marks, have been established to seek out and eliminate potential problems.

"Protection must be an integral part of every fabrication, moving and storage operation," Cook said. "Prevention of scratches and other damage will be the responsibility of every individual who handles DC-10 skins or related materials."

Cook said the DC-10 program requires by far the most stringent material handling requirements ever involved in a Convair aircraft program.

"Passengers associate external appearance of an aircraft with its structural and mechanical integrity," Cook said. "We must deliver every DC-10 skin with a mirror-like finish and without visible blemish."

Each DC-10 fuselage section will have EZduzit care until it is delivered to the McDonnell Douglas plant in Long Beach. A similar "Kid Gloves" program then will be applicable through assembly, test and delivery.

Aerfer Industrie Aerospaziali Meridionali of Naples, Italy, which will build above-floor-level panels for the DC-10 under Convair subcontract, also has instituted a "Trattare Con Guanti Gialli" campaign. Translated, this means "handle with yellow gloves" and in Italy has about the same meaning as "handle with kid gloves."

Hurt said much ground work has been accomplished in preparation for implementation of EZduzit concepts, including 72 special material handling and packaging classes that have been attended by 1,357 Convair employes.

"Dollars — as well as skill and pride in craftsmanship — will be involved everytime anyone handles a DC-10 skin," Hurt reiterated.

"Remember, EZduzit — a DC-10 skin has to look perfect to be perfect."

Engineers Combine Effort For Savings of $253,100

Three Convair engineers have been credited with a cost reduction recommendation in support of the production of F-111 ground support equipment (AGERDs) that will save Convair an estimated $253,100.

The three engineers, R. G. Barnhill, Dept. 553-2 senior electronics engineer, D. E. Herbert, Dept. 553-2 design specialist and G. S. Stringfellow, Dept. 550-0 senior project engineer, were awarded certificates of commendation for their efforts by F. D. Applegate, director of product design.

As Convair began to increase production of F-111 AGERDs, it was determined that the available wiring verification test capability would have to be expanded.

Historically, wiring verification tests have been performed at Convair using a DITMCO 2000 general purpose wiring tester which requires a large engineering patch board design effort.

It was estimated that with increased production almost 500 DITMCO patch boards would have to be designed and fabricated to support the testing process.

On studying the problem, the three engineers determined that by using a DITMCO 660, a more modern unit which is programmable by means of punched tape instead of patch boards, a significant cost savings could be realized.

As a direct result of their study, a DITMCO 660 has been purchased and placed into operation.

The men split the credit for the $253,100 three ways and each commendation credits the men for reducing costs by $84,366. (Except for Stringfellow who got an extra $2 because $253,100 could not be divided three ways!)



QUARTER MILLION—Trio shown with certificates are credited with a $253,100 cost reduction proposal by recommending use of an improved circuit analyzer in support of F-111 AGERD program. From left are D. E. Herbert, G. S. Stringfellow, R. G. Barnhill and F. D. Applegate. Applegate, director of product design, presented certificates of commendation.

U.S. Bonds Buying Tops 90 Per Cent

More than 90 per cent of Convair division's employes now are buying U. S. Savings Bonds through payroll deduction — 18 per cent more than before last month's two-week U. S. Savings Bonds campaign.

Paul Allgire, supervisor of employe benefits who directed the campaign, and Del Dimmitt, division fire chief who served as campaign coordinator, said 2,300 new bonds buyers were signed during the drive — almost two-thirds of the 3,660 not participating when the campaign began.

In addition, 307 who already were purchasing bonds through payroll deduction increased their participation amount.

Many signed for the first time for purchase of Freedom Shares in conjunction with Series E bonds purchases. Freedom Shares pay 4.74 per cent when held to maturity in 4½ years.

Dimmitt praised departmental bond drive coordinators for "doing an outstanding job" and said individualized red, white, and blue signs displayed by sections reaching 100 per cent participation helped boost the total.

Some sign-up cards were still outstanding at press time but preliminary figures showed department participation as:

Quality control, 98.7 per cent; contracts, marketing, communication, and new product development, 98.1 per cent; industrial relations, 98 per cent; material, 97 per cent; finance, 95.5 per cent; Eastern Test Range, 95.2 per cent; Kearny Mesa operations, 94 per cent; launch vehicle programs, 91.3 per cent; engineering, 88 per cent, and Lindbergh Field operations, 84.9 per cent. A preliminary total for Western Test Range employes was not available.

Dimmitt said Kearny Mesa operations did "exceptionally well," completing the campaign with 1,855 of its 1,982 employes participating. Lindbergh Field operations had the biggest increase in number of new bond buyers — with 3,864 of its 4,551 employes now participating.

Campaign emphasis was on total employe participation. Employes can purchase bonds through payroll deduction for as little as 50 cents a week.



100 PER CENT SIGN — Mrs. Margaret Dumler, Dept. 572-0 secretary, is shown along with the 100 per cent sign she helped originate.

Red, White, Blue

Year Old Idea Put to Use

About 200 Convair departments so far have earned special red, white and blue signs, recognizing the fact that 100 per cent of their members are buying U. S. Savings Bonds by payroll deduction.

They have Margaret M. Dumler, Dept. 572-0 secretary, to thank for the visual recognition.

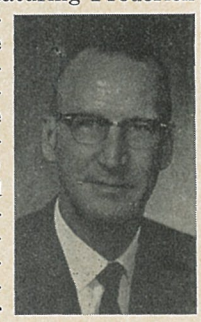
A year ago, following the bond drive of 1968, Mrs. Dumler used the Employe Suggestion system to urge that some tangible symbol be presented to 100 per cent departments for display when Convair next held a drive.

The idea was tucked away but revived last month in communication department, resulting in creation of a design and preparation of award signs.

Mrs. Dumler received a letter shortly after the first signs were awarded, informing her that her suggestion had not been forgotten and that "the credit is yours."

NMA President Will Address 'Quadrastar' Special Tonight

The Convair Management Club will present a "Quadrastar Special" program featuring Frederick W. Hauf, president of the National Management Association, at the Bahia Hotel tonight (June 11.)



F. W. Hauf

Events will include installation of new officers, presentation of scholarships to four students and presentation of awards to Management Club members who have made outstanding contributions to the club in the past year.

The meeting, in the Mission Bay Room, will begin with a social hour at 5:30 and dinner at 6:30 p.m. Executive sponsor for the special is Jack L. Bowers, Convair general manager.

In addition to his duties as president of NMA, Hauf is secretary-treasurer of the Lakeside Bridge and Steel Co., Milwaukee, Wis.

Officers and members of board of control for the coming year are:

J. E. Cook, Dept. 149-7, president; H. B. Day, Dept. 518-0, 1st vice-president; C. B. Simmons, Dept. 954-3, 2nd vice-president; G. W. Cowan, Dept. 820-0, record-

(Continued on Page 2)

Night Calls to LF Now Go Through KM

The telephone switchboard at Convair's Lindbergh Field plant now is closed after 6 p.m. weekdays and all day Saturdays and Sundays.

After-hours calls for LF will be connected through the Kearny Mesa switchboard (277-8900). Callers must specify an LF extension for proper connection.

Calls to LF (296-6611) while the switchboard is closed will be referred to the KM number by a recording.

For Second Year in Row, QC Section Honored as 'Best Managed in Nation'

The San Diego section of the American Society for Quality Control has received the ASQC's Saddoris Award for "the best managed section among all those in the nation." This is the second year in a row the section has won it.

The award was presented to Paul Gelles, Dept. 144-2, chairman of the San Diego section, at the opening session of the ASQC's 23rd Annual Technical Conference and Exhibit in Los Angeles recently.

At the conference Convair displayed the USAF Zero Defects Award in a Quality Control '69 display.

Among those from General Dynamics participating in the conference were L. I. Medlock, Convair director of reliability control; P. I. Harr, General Dynamics director of reliability and quality assurance and value control; C. Biagini and B. F. Clemons from Electronics-Rochester; L. A. Milton and Gelles from Convair; R. H. Miller from Stromberg DatagraphiX; A. P. Alaimo from Pomona division.

If one copy is sufficient, why order more?



SADDORIS AWARD—Paul Gelles, right, Convair Dept. 144-2, receives Saddoris Award of American Society for Quality Control on behalf of San Diego section of ASQC from G. A. Goethner, Saddoris Award chairman, left, at 23rd Annual Technical Conference and Exhibit of society held in Los Angeles.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between June 1 and June 15.

Thirty-five-year: Dept. 059, F. J. O'Connor.

Thirty-year: Dept. 027, J. L. Killeaney; 031, G. F. Cooper; 566, R. H. Robbins; 587, C. E. Edenfield Jr.

Twenty-five-year: Dept. 045, Winfried D. Schackel; 572, C. W. Alesch; 761, M. L. Bjorstrom; 958, June W. Fennell.

Twenty-year: Dept. 106, Charlotte C. McLaughlin; 113, C. D. Foster; 780, R. A. Gregory.

Fifteen-year: Dept. 002, R. Vargas; 101, Ann W. Walsh; 131, A. C. Werts; 149, B. J. Moore; 250, G. Caldwell, A. F. Delos, Jr., N. J. Waddington; 400, Jean E. DeWald, J. E. Dvoracek; 420, L. A. Horde; 506, D. N. Kahler; 543, R. J. Dunn; 553, E. W. Carlson; 596, M. K. Yonemitsu; 780, Dora S. Cote, D. W. Staley; 835, C. L. Smith; 951, F. Rickon Jr.; 985, D. B. Woodruff.

Ten-year: Dept. 001, L. J. Collis; 002, Dorothy M. Mandell; 141, Carole L. De La Isla; 149, K. M. Boekamp; 191, Anne S. Kelly; 400, Linda L. Sharp; 515, J. P. Moore III; 524, Mary J. Saunders; 553, E. Dennis; 596, E. W. Rothe; 756, W. J. Brunnhoeizi; 800, G. W. Zahrte; 810, Carol I. Gamache, Bernice M. Gestaut; 840, J. L. Richman; 860, Ada B. Stapleford; 952, R. C. White; 953, Dorothy L. Asakawa; 962, E. R. Kimmy; 979, J. H. Brady, W. B. DeMoss, B. J. Simon.

ELECTRONICS

Ten-year: Dept. 422, R. E. Wilkerson; 616, R. L. Cooley Sr.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending May 16.

Dept. 780, H. D. Akers, D. G. Longbottom, $16.85 each (joint award); 027, B. R. Armstrong, $16.50; 401, J. C. Ascencio, $15; 016, L. W. Barbour, $28; 979, S. M. Benn, $15; 553, J. F. Brody, $1,355.20; 045, L. E. Brown, $15; 027, P. W. Byrd, F. H. Stine, $35.90 each (joint award); 027, L. Castro, $145.20; 780, N. S. Cole, $15; 027, W. C. Cropp Jr., L. W. Howerton, $7.50 each (joint award); 250, K. R. DeArmond, $30 (two awards); 149, D. Decker, $36.95; 780, C. M. De la Bretonne, $33.90; 400, C. A. Detty, P. J. Kinney, $7.50 each (joint award); 027, J. E. Dillard, $17.60; 059, D. M. Dvorak, $261; 149, L. M. Earl, $85.80; 780, E. F. Echols, $15; 574, W. B. Evans, $109; 149, H. Gaines, $36.95.

Dept. 144, H. M. Gallant, M. J. Sorg, $7.50 each (joint award); 578, B. A. Banoe, $60.40; 142, R. D. Gehring, $78.70; 016, J. D. Godwin-Austen, $52; 401, D. J. Harms, $15; 756, R. S. Hayes, $15; 015, S. J. Heston, $30; 045, I. D. Howarter, $15; 143, H. A. Jackson, $15; 059, L. A. Jones, $15; 574, T. Lazos, $15; 401, M. A. Livesay, $15; 027, M. J. Lynn, $65.80; 130, J. F. Matthews, $17.80; 146, K. McCafferty, $98.20; 507, R. F. McGinnis, $15; 027, J. Mejia, $16.50; 533, P. A. Nagy, $15; 049, W. C. Pahl, $15; 958, R. B. Peterson, $148.20; 031, L. Ransom, $15; 507, J. R. Richard, $15; 732, L. E. Rossi Jr., $67.80; 027, A. Stirling, $19.70; 001, C. R. Thompson, $15; 250, W. T. Toon, $35.50; 840, A. L. Wolfe, $15.

Employe Suggestion awards approved for the week ending May 23.

Dept. 027, A. R. Anderson, $67 (four awards); 401, J. C. Ascencio, $128.40; 027, R. J. Baldwin, $64.60; 144, J. H. Brewer, $40.10; 027, P. W. Byrd, $39.40; 015, K. W. Camp, $15; 250, K. R. DeArmond, $15; 833, D. A. DeDonato, $15; 027, J. L. Entsminger, $15; 250, W. E. Gille, $50; 016, J. D. Godwin-Austen, $34.20; 001, D. C. Herstedt, K. K. Jones, $7.50 each (joint award); 979, J. A. Jones, $30 (two awards); 578, D. E. Lawrence, $30; 019, P. LoCoco, R. J. Witte, $7.50 each (joint award); 130, R. G. Maler, $25.

Dept. 574, W. A. McBrayer, $105.80; 401, J. F. McConnell, $15; 015, J. K. McDonough, $32.30; 143, P. H. Milne, $15; 130, F. M. Morris, $15; 149, K. T. Mosbarger, $107.90; 027, D. R. Noon, $88.20 (three awards); 019, S. G. Padilla, $23.40; 518, H. G. Peltier, $30; 045, A. J. Pommier, $15; 780, A. Ramberg, $15; 143, R. R. Reekers, $34 (two awards); 143, G. A. Rummel, $15; 016, M. C. Stevens, $51.70; 250, J. E. Strachan, $15; 574, E. C. Strehlau, $15; 401, L. Trentacosta, $15; 985, R. L. Westfall, $100; 019, J. E. White, $15; 027, J. H. Wines, $85.90; 045, R. F. Yturralde, $40.90; 144, J. Zoll, $25.90.

Employe Suggestion awards approved for the week ending May 29.

Dept. 027, A. R. Anderson, $32.10 (two awards); 016, M. V. Archibeque, $34; 027, C. W. Burnham Jr., $15; 733, N. Chaudoin, $15; 780, N. S. Cole, $15; 027, A. I. Cox, L. N. Di Campli, $267.40 each (joint award); 015, C. W. Dunbar, $90.90; 027, L. A. Edrington, $67.20; 027, P. J. Estrada, $97.70 (two awards); 460, H. C. Filkskov, $39.40; 454, T. P. Hard, $15; 756, C. A. Harrington, $15; 961, W. H. Hill, $15; 588, W. D. Honeycutt, $134.90.

Dept. 836, E. Klumpp, $15; 574, K. R. Krebs, $525.70; 027, R. E. Lopez, $15; 144, C. L. Marks, $96.80; 551, E. H. Maurer, R. G. Thompson, $25 each (joint award); 566, J. R. McLemore, $185.20; 756, J. J. Monty, H. E. Naish, $7.50 each (joint award); 731, A. Okuni, $15; 588, J. E. Oostyen, $15; 027, R. G. Reese Jr., $25.40; 015, J. A. Riehl, $216.80 (two awards); 979, R. L. Rondeau, $82.70; 027, D. D. Salyer, $25.80; 031, H. O. Schroeder, $40.10; 142, F. C. Thompson, $120.40 (two awards); 027, H. F. Thompson, $17.10; 578, R. J. White, $95.60; 584, K. Whitehead, $15; 016, A. J. Winner, $15; 588, F. D. Winston, $15; 027, H. M. Zeno, $17.10.

Invention Disclosures

CONVAIR

BEAR—M. D., Dept. 541, D. W. MAYBERRY, Dept. 491. Electronic cure monitor for thermo-setting plastic resins.

HERSH—M. S., Dept. 572, Wm. RODEN, Dept. 491. Spot joining of titanium to aluminum-boron metal matrix composite.

MONTE—J. J., H. E. WAISH, Dept. 756. Radius turning device.

VAN DUREN—A., Dept. 589. Laser guided weapon delivery system.

Retirements

CONVAIR

DeWITT—Herbert L., Dept. 732-0. Seniority date Sept. 12, 1966, retired May 30.

ELLISON—Milbra W., Dept. 832-5. Seniority date Jan. 7, 1957, retired May 30.

HERTH—William H., Dept. 250-2. Seniority date May 24, 1950, retired May 29.

LUNDQUIST—Theodore G., Dept. 059-6. Seniority date Dec. 7, 1950, retired May 29.

RONALDSON—Signe W., Dept. 191-0. Seniority date Sept. 15, 1954, retired May 29.

RUUD—George B., Dept. 250-2. Seniority date July 20, 1953, retired May 29.

WYATT—Merle E., Dept. 101-1. Seniority date Feb. 26, 1947, retired May 29.

Rider-Driver

CONVAIR

RIDE WANTED—From Lindberg Field plant to Diane Shoping center, Clairemont, 4:30 p.m. Call Bill Simmons, ext. 2415 LF or (home) 278-0764.

Personals

CONVAIR

We would like to express our thanks to our many friends at Convair for their kindness, help, and sympathy upon the recent death of Doris W. Sack. God bless each of you.

The A. L. Sack family
Dept. 146-3.

* * *

Your basket of flowers in tribute to Don were deeply appreciated by the boys and me.

Mrs. Donald K. Krosch
Dept. 141-4.

* * *

We would like to thank our friends for the flowers and other expressions of sympathy upon the recent death of my mother.

Henry P. Kelly and family
Dept. 520-1.

Lost & Found

CONVAIR

REWARD—Caravelle diver's wristwatch, wide black leather band, lost in Dept. 019 at LF plant. Reward, no questions asked. Phillip Giamanco, ext. 2057.

Deaths

CONVAIR

BELDEN—Joe M., retired April 5, 1966, Dept. 985, died May 24. Survived by his wife Dorothy.

CEDERWALL—Leonard O., retired Jan. 15, 1965, Dept. 6, died May 20. Survived by his wife Marjorie.

DUFFY—George E., retired Nov. 1958, died May 27. Survived by his wife Marguerite.

HELDENBRAND—John B., retired Feb. 5, 1962, Dept. 140, died May 22. Survived by his wife Alva.

LESSLE—Frank P., retired April 11, 1962, Dept. 144, died May 21. Survived by his brother Heinz.

THATCHER—John W., retired Jan. 23, 1961, Dept. 401, died May 7. Survived by his wife Eva.

WRIGHT—Edwin M., retired May 24, 1963, Dept. 759, died May 27. Survived by his wife Marion.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

'Apprentice of the Year' Awarded Convair Honors

Dale L. Brown of Dept. 780-2 last week was presented an award plaque and a pocket slide rule as Convair division's "Apprentice of the Year" for 1968.

Jack Croft and Robert McKellips, representing the Joint Apprenticeship Committee, and Wayne Turner, coordinator for the apprenticeship program for educational services Dept. 130-3, made the belated presentation to Brown at his home, where he is recuperating from injuries suffered in a skydiving accident.

Brown joined Convair in March, 1964, as an electronics assembler and entered the four-year apprenticeship program four months later.

During the program, he earned his Associate in Science degree through San Diego Evening College and had rotating assignments in Convair's electronics manufacturing, test and laboratory areas and in the high-speed wind tunnel, standards lab and material processes lab.

Croft, chief of educational services and chairman of the Joint Apprenticeship Committee, said Brown's selection as "Apprentice of the Year" was based on his exemplary work reports, college grades, and attendance.

Brown, a veteran skydiver and water ski enthusiast, broke his right leg and both ankles when atmospheric conditions caused him to make a faster-than-normal parachute descent and landing March 30 in Phoenix, Ariz.

He expected to have the last of his casts removed June 9 and to be back on the job a short time later.

Others completing the apprenticeship program last year were John T. Tattoli, Dept. 015-0; Kory Bratlien, Dept. 780-4; S. Keith Willis, Dept. 507-0; Robert J. Connell, Dept. 400-0, and Robert B. Howe, Dept. 420-3.



APPRENTICE ACCOLADE—Dale Brown, Dept. 780-2, receives Convair's "Apprentice of Year" award from Jack Croft, left, and Robert McKellips, both of Joint Apprenticeship Committee, and Wayne Turner, right, program coordinator. Presentation was made at Brown's home, where he is recovering from injuries suffered in skydiving mishap.

NMA President Will Address 'Quadrastar' Special Tonight

(Continued from Page 1)

ing secretary; A. E. Divine, Dept. 059-1, financial secretary; J. A. Dematteis, Dept. 193-1, treasurer.

Three year board members are N. Freeman, Dept. 130-6, R. W. Miller, Dept. 055-0, G. G. Christ, Dept. 763-1, Walt Hicks, Dept. 950-1 and Lyle Wood, Dept. 840-1.

Two year board members are R. J. Archibald, Dept. 810-0 and Art Braidic, Dept. 835-0. One year board members are J. M. Bowers, Dept. 140-2, C. C. Campbell, Dept. 958-7 and T. Kell, Dept. 202-1.

Also on the board of control are W. F. Chana, Dept. 102-0, past president; E. (Gene) Fox, Dept. 130-6, company adviser and W. E. Magnuson, Dept. 140-1, NMA director.

Receiving awards will be Bill Chana and Mrs. W. F. Chana, both "in appreciation" awards. Presidents Awards will go to Marve Rickling, David Chigos, Jess Cook, Art Medrano, Don Menard and Don Evanson. Directors Awards will go to Larry Sweeney, Jack Croft, Wayne Turner, Lloyd Curtiss, Harvey Seibert and Terry Kell.

A "Mr. Idea" award will be presented to R. J. Ratliff and a Booster of the Year Award to Ed Stelmach. The Convair Management Club Man of the Year Award will be announced at the dinner.

Scholarships will be awarded to Mary Hagar, daughter of R. L. Hagar, Dept. 595-0; Robert A. Kaye, son of Samuel Kaye, Dept. 596-0; Holly E. Kossyta, daughter of J. J. Kossyta, Dept. 142-1; Karen Wadleigh, daughter of G. E. Wadleigh Dept. 966-9.

FAA Reviews LF Plant For Certification

Convair's Lindbergh Field plant procedures and facilities were surveyed late last month by the FAA Critical Characteristics Review Board for the purpose of continuing the Federal Aviation Agency production certificate under which Convair has been operating since 1948.

R. C. Hopper, FAA supervising manufacturing inspector, Burbank, Calif. office, chaired the review board in San Diego for inspection of facilities.

Other FAA officials included Michael Brega, supervising inspector San Diego region; manufacturing inspectors B. E. Wellmaker, J. C. Butler, J. C. Reuter, all of McDonnell Douglas; B. J. Blythe, manufacturing inspector, Boeing Aircraft, Seattle; and D. T. Sharman, aerospace engineer, FAA Los Angeles office.

J. M. Adamson, Lindbergh Field manager of operations, outlined Convair's present commercial spares support program.

R. H. Gilliland, Lindbergh Field manager of reliability control, was responsible for coordination of the FAA review.

Other Convair personnel making presentations were L. C. Stuckey who spoke on blueprint control; C. Wallman, commercial spares manufacturing; J. D. Tate, spares control program; J. E. Vondracek, calibration system; J. R. Dressler, nonconforming material; P. S. Rader, material and process test service; and F. L. Miller, corrective action.

Renewal of the production certificate is anticipated within 30 days.

Electronics-SD Con-Trib-Club Gives 'Shrine'

Electronics-SD Employes' Con-Trib-Club and the San Diego Exchange Club recently presented a Freedom Shrine, containing reproductions of 28 U. S. historical documents, to San Diego City College.

George Leesch, chairman of the Con-Trib-Club, and Mrs. Gloria Cooper, club secretary, attended a luncheon meeting May 29 at which the Shrine was presented.

Mrs. Cooper said the Con-Trib-Club donated $475 for purchase of the document reproductions and designated San Diego City College as recipient.

Students in the college's mill cabinet shop built the portable stand on which the documents are displayed.

The Exchange Club, with financial assistance from business and industrial firms, hopes to place a similar Shrine in each high school and college in San Diego County.

Allen Albright, manager of contract pricing for Convair, assisted with arrangements for the City College presentation as vice president of the Exchange Club.

A. J. Seifert Leads California 'Knights'

Albin J. Seifert, a program analyst in Convair's operations control Dept. 834-2, was elected to California's top position in the Knights of Columbus May 30 at the anual meeting of the Catholic men's fraternal organization.

He will assume duties as state deputy July 1. The organization has 300 local councils and 50,000 members in California.

Campbell to Chair Toastmaster Meet

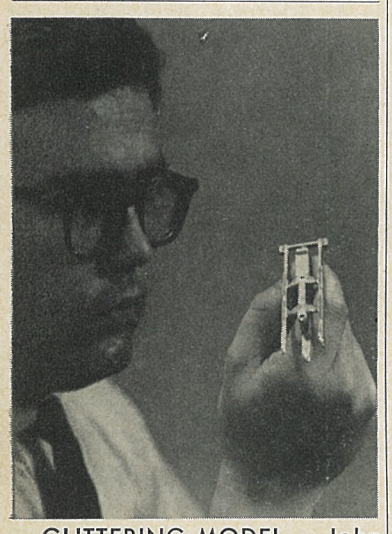
Cy Campbell, Dept. 958-7, an international director of Toastmasters International, will chair a regional Toastmasters conference June 20 and 21 at Bahia Convention Center.

Recently elected officers include Durwood English, Dept. 195-2, and Hal Story, Dept. 149-7.

Employe Suggestion Savings Tabulated

Ten General Dynamics divisions and subsidiaries saved $2.8 million through Employe Suggestion programs during the first quarter this year.

Algie A. Hendrix, General Dynamics vice president, said this represented 26 per cent of their year's total Employe Suggestion savings goals and represented a $600,000 increase in suggestion savings over the first quarter of last year.



GLITTERING MODEL — John Beard, Convair model design engineer, looks over a little 2½-oz. Maverick missile launcher model containing 92 per cent gold. Use of gold resulted in substantial cost saving.

Leaders among divisions and subsidiaries listed with its first quarter Employe Suggestion program savings and percentage of 1969 goal, are:

Fort Worth, $1,158,664, 32.1; Pomona, $464,760, 51.1; Quincy, $319,613, 14.5; Convair, $246,363, 25.7; Electric Boat, $231,603, 12.9; Canadair, $168,591, 33.7; Electronics, $111,636, 29.8; Stromberg-Carlson, $82,712, 33.1.

The first quarterly issue of a General Dynamics Suggestion Performance Report was published recently to show division and subsidiary performance in measurable Employe Suggestion program areas.

Number of suggestions and suggestors per 100 employes, number of suggestions adopted per 100 employes, suggestion processing backlog, and performance improvement were considered in determining competitive standings.

Convair, Pomona, and Canadair held top positions for the first quarter. Convair had 11.6 suggestions and 7.8 suggestors per 100 employes; Pomona, 8.6 and 6.2; Canadair, 6.7 and 4.1.

Runers-up were Electronics, Quincy, Fort Worth, Electric Boat, and Stromberg-Carlson. Material Service, Freeman Coal, United Electric Coal, and Marblehead Lime have new programs, being ranked separately, and Stromberg DatagraphiX will not be reporting until mid-year.

Models Made of Gold; It's Cheaper That Way!

Convair's wind tunnel model design group recently produced 36 Maverick Missile launcher models from 22-karat gold—and achieved a substantial cost saving in the process.

The 1/24-scale models were used last month in a series of wind tunnel tests at the Air Force's Arnold Engineering Development Center in Tullohoma, Tenn., and were the first Convair-produced models made from gold.

"Gold, costing $46 an ounce, gave us the highest density castable for the launcher models," John E. Beard, model design engineer, said.

"Kennertium or tungsten alloys that normally would have been used would have been extremely difficult and costly to machine to the required geometry, which included two tee-shaped rail supports with elliptical cross sections.

The alloy used — 92 per cent gold and 8 per cent silver — was cast to exacting Convair specifications by a Los Angeles wholesale jewelry firm. Silver was added because pure gold would have been too soft.

Design, fabrication and calibration of the models was under the direction of Stan Griffin, aeronautical laboratories group engineer at Lindbergh Field plant.

Gerry Blumenthal, a design model engineer, suggested the lost-wax-casting process and has submitted an Employe Suggestion on its use.

The tests at Tullahoma simulated jettison characteristics of the full-scale classified Maverick missiles and their unclassified launchers from F-111 aircraft at 485 to 600 mph at 2,000-foot altitude, and under different wing-sweep conditions.

Grady Barton of Fort Worth division was test conductor. Beard and Jim Haldy, wind tunnel test engineer, were present from Convair to assist. Test data was recorded with three high speed motion picture cameras.

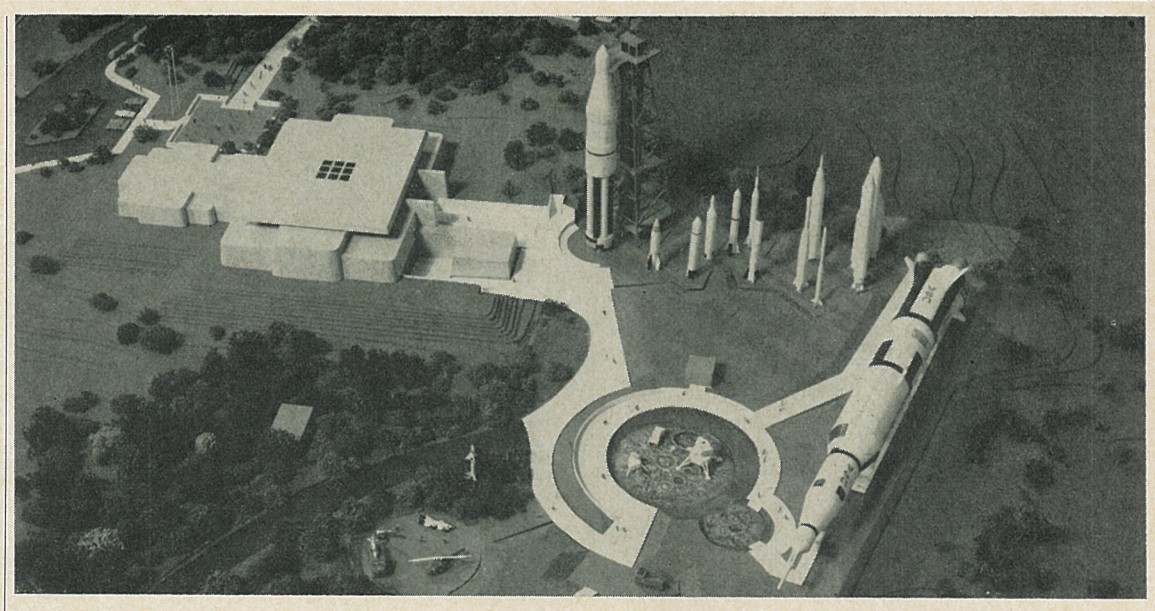
Special care was taken to insure that each of the models was recovered after being jettisoned—and for good reason!

Gold used in the models will be recovered and resold by Convair for 80 per cent of its original cost.

"After the models were retrieved, we still had 96.9 per cent of the gold originally used," Beard said. "We will get from $80 to $90 return from the gold in each of the 36 models."



UNDERWATER STAR—Jacques-Yves Cousteau, left, noted French undersea explorer, chats with A. W. "Flag" Adams, manager of Electric Boat's Marine Technology Center at San Diego. They discussed capabilities of STAR II research submarine, which took part in recent filming of "Undersea World of Jacques Cousteau" for TV special.



SHOWPLACE—Artist's conception shows Alabama Space and Rocket Center as it will look when it opens in September.

Last Trip

Atlas Travels River Route To 'Rocket Row'

Convair-built Atlas missiles have circled the globe and spanned the oceans — but one recently established a record by going through the Panama Canal and up three rivers.

Atlas 10F, which had been in storage since 1965 at Norton AFB, Calif., made the 4,000-mile over-water trip to take its final stand in the $10 million Alabama Space and Rocket Center, which will open in September in Huntsville.

Although twice scheduled for ballistic-trajectory flights over the Atlantic, it "never got off the ground" and wound up as a "hitch hiker" for 3,000 of its last 4,086 miles.

Once part of the Strategic Air Command's mighty Atlas ICBM arsenal, Atlas 10F was tucked away aboard a converted Navy LSD, the USNS Point Barrow, March 27 in Seal Beach, Calif., for a 13-day, 3,000-mile trip which took it through the Panama Canal and to NASA's Michoud facility in New Orleans.

(The Point Barrow was making the trip to deliver one giant Saturn S-II and three Saturn IV-B stages to Florida for use in future Apollo missions.)

The Atlas, still pressurized and on its missile trailer, was transferred to a river barge in New Orleans for a six-day, 1,086-mile trip up the Mississippi, Ohio, and Tennessee rivers to Huntsville.

The Alabama Space and Rocket Center, the Free World's largest missile and space-hardware exhibit, will feature displays representative of NASA's Marshall Space Flight Center in Huntsville, the U. S. Army Missile Command, and many U. S. aerospace companies.

Included will be Mercury, Mariner, Lunar Orbiter and Surveyor spacecraft like those launched by Convair's Atlas and Centaur.

F. F. Stanford, a project engineer in Convair's Dept. 950-5, and W. P. Shine, design group engineer in Dept. 962-3, assisted NASA-Marshall, Air Force, Navy, and Alabama personnel in planning for the last "voyage" and display of the surplus ICBM.

Atlas 10F was assembled at the Kearny Mesa plant, accepted by the Air Force, and shipped to Cape Canavaral in October, 1961, for planned use in one of the last F-series research and development flights.

It was returned to San Diego in January, 1963, modified later for planned ABRES (Advanced Ballistic Re-Entry Systems) use, and trucked back to the Eastern Test Range in November, 1964. It was declared surplus after its planned mission was canceled and ABRES operations shifted to the Western Test Range. It has been stored at Norton AFB since 1965.

Visitors by the thousand soon will see the Atlas — along with other rockets ranging from the V-2 to the Saturn V — in its new home on Huntsville's "rocket row."

Executives Visit Norfolk For USS Leahy Briefing

Top Navy officers and General Dynamics executives were at Norfolk, Va., recently for a comprehensive tour and briefing on fighting systems of the USS Leahy (DLG-16), lead ship in the Navy's DLG Modernization Program.

Leahy recently completed the DLG Modernization Program with outstanding results.

Roger Lewis, General Dynamics president, headed the Company group which included C. D. Perrine Jr., Pomona division executive vice president; C. L. McCabe, Pomona director of systems support and logistics; P. E. Schwab, manager of Navy systems, GD Washington office.

Capt. R. C. Fay, PMS 378, Naval Ship Systems Command, who has management cognizance of the DLG Modernization Program, accompanied the General Dynamics group. RAdm. J. R. Wadleigh, commander of Cruiser-Destroyer Flotilla 4, Norfolk, also was a guest.

Capt. W. B. Murray Jr., commanding officer of Leahy, and other ship's officers hosted the tour, conducted orientation sessions on the fighting systems, and gave a description of the ship's forthcoming South American goodwill tour.

Management discussions were held on achievements of the specialized system test and training contract responsibility performed by Pomona division and its industry team members, Sperry-Rand, ITT Gilfillan, and Librascope. Capt. Murray gave high credit to the General Dynamics-led team for outstanding system performance achievements of the ship.

Lewis observed and commended the obvious teamwork and professionalism of the Leahy's personnel in their recent accomplishments and pledged the continued dedication of the General Dynamics team to achievement of similar results on the remaining 19 ships in the program.

Mort Rosenbaum Retires After Long Aircraft, Missile Career

Mort Rosenbaum, who has had important roles in developing many Convair aircraft, the Atlas ICBM, and Atlas and Centaur space boosters, retires this week after more than 33 years with the Company.



Mort Rosenbaum

Rosenbaum joined Consolidated Aircraft Co. Jan. 6, 1936, in San Diego as a stress analyst when there were only 60 people in engineering.

As Convair's director of aircraft programs management since 1965, his office in Bldg. 1 at Lindbergh Field is just a few feet from where he first worked on stress analysis for the XP3Y-1, the PBY, the PB-2A and other early Consolidated craft.

He became senior design engineer on B-24s in 1939, structures group engineer for all developmental aircraft from 1940 to 1948, and project engineer on the T-29 in 1949.

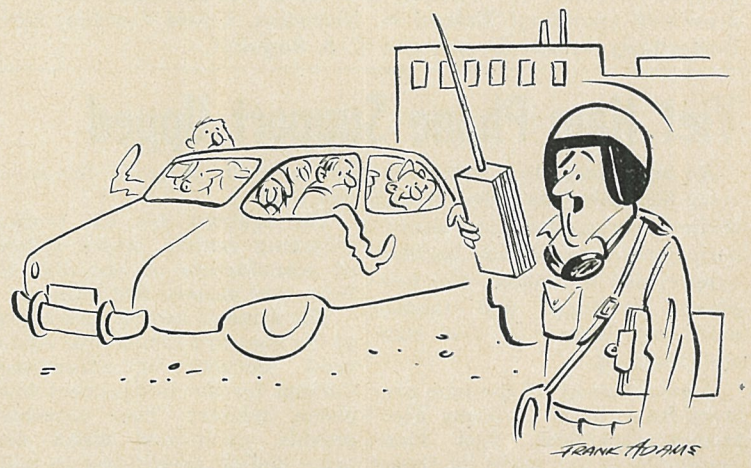
Rosenbaum's work in the rocket field began in 1952 when he became project engineer for development of the MX-1593 (forerunner to the Atlas), later designated Model 7.

He saw the Atlas program grow from 35 to 35,000 employes.

After the Astronautics division was established in 1958, Rosenbaum served as vice president for research, development, and engineering, became executive vice president for the division in 1961, vice president-engineering in 1962, and vice president-manned space systems in 1964.

Of many career highlights perhaps the most rewarding was when John Glenn, a good friend, rode Atlas 109-D into the heavens and circled the globe three times in Friendship 7.

Another came in 1960 when Rosenbaum was named a Fellow of the American Rocket Society (now American Institute of Aeronautics and Astronautics).



"I don't know whether to book 'em on 'overcrowded carpool' or 'unlawful assembly' . . ."

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Isn't it about time to reconsider policy in regard to basing vacation on continuous service? Judging from newspaper ads we are in a hiring campaign. Restoration of vacation seniority might be a strong inducement for qualified engineers and machinists to return to Convair.

A—The current policy, which management believes to be equitable, rewards employes who stay with the company and penalizes those who terminate voluntarily. Your suggestion may have some inducement for former employes to return. However, in the long run it is believed that current policy leads to less turnover and therefore more efficient operation.

★ ★ ★

Q—Why are cars permitted to park alongside the fence of the parking lot at Plant 19 on Frontier Street? Pedestrians are forced to walk in the street and this is dangerous.

A—The cars are parked illegally on city property. The city has informed Convair of its intent to refurbish the "no parking" signs and issue tickets to violators.

★ ★ ★

Q—The curb in front of the CRA Clubhouse is painted red, presumably to indicate no parking. However, I have seen cars parked there.

A—Cars halted in this zone are for unloading CRA supplies. CRA personnel have been advised not to park for any length of time except in emergencies.

★ ★ ★

Q—What is policy regarding the inspection of lunch boxes on entering the plant? Some guards check them, some do not. It would be helpful to know whether to have them open or closed.

A—Policy is to spot check. Keep them closed unless the guard asks you to open them.

New Officers to be Installed Tonight At Electronics-SD Mgt. Club Meet

New officers for the Electronics-SD Management Club will be installed at a dinner meeting at 6:30 this evening in the Atlantis Restaurant.

Robert L. Williams, program manager for F-111 AGERD test stations, will be installed as president. He has been with General Dynamics 16 years, including five years with Electronics.

Other new officers are James Taber, first vice president; Jack N. Webb, second vice president; Calvin Franklin, secretary, and Marv Delperdang, treasurer.

New members of the Board of Control, also to be installed, are Robert Christy, C. B. Bagaloff, and Richard H. Nicholson.

Williams said the new officers will continue emphasis on management development programs and will encourage more individual participation in club activities.

Dr. John R. Van de Water, a USC professor and president of a management consultant firm, will speak on "Effective Use of Our Minds" at the meeting. An "attitude adjustment" hour will begin at 5:30.

A few tickets are still available today through Management Club boosters. California Chablis white wine will be served with the boned brook-trout dinner.



CLUB LEADERS—Electronics-SD Management Club officers will be installed tonight. From left are (seated) Jack Webb, second vice president; Robert L. Williams, president; James Taber, first vice president; (standing) Richard H. Nicholson, Calvin Franklin, Marv Delperdang, Robert Christy, and C. B. Bagaloff.

Viet Nam Phone Support Upped

An amendment to a letter contract increasing its value to $3.2 million was awarded to Stromberg-Carlson to provide logistics support and to manage dial telephone exchanges and tandem switching centers in Viet Nam and Thailand.

Announcement of the new contract from the U. S. Army Electronics Command, Fort Monmouth, N. J. was made by Dause L. Bibby, president of Stromberg-Carlson. The original program has been in progress for about two years.

The contract for the tandem switching centers, which followed manufacture of the dial offices, now exceeds $12 million.

The systems are an application of the standard commercial equipment produced by Stromberg-Carlson for the Independent telephone industry. They currently provide operational direct distance dialing capabilities to military commands throughout Southeast Asia.

EB's Procurement Over $50 Million

The procurement department of Electric Boat division placed orders for over $50 million in 1968, according to Don H. Painter, department manager.

"We did business with 3,073 suppliers in 46 states", Painter said. "Our records show that 80 per cent of our vendors were in the small business category, and almost half the dollar volume went to those small business firms."

Connecticut ranked highest, both in dollar volume and in the number of suppliers. New York, Massachusetts, New Jersey, Pennsylvania, California, Rhode Island and Ohio followed in that order in the over-$1 million category.

Lou Fead Installed By Undersea Pilots

Louis M. Fead, STAR II chief pilot at Electric Boat division's Marine Technology Center in San Diego, was installed as president of the Deep Submersible Pilots' Association at a May 20 meeting in Houston, Texas.

The association was established in 1967 for rapid and accurate exchange of related safety and educational information and to provide qualifications criteria for deep submersible pilots.

It has 40 members and now is accepting applications from foreign deep submersible pilots.

Two GD Sons Capture Science Fair Firsts

Two sons of General Dynamics employes won first prizes at the recent Southern California Science Fair in Los Angeles.

Michael Eaton, son of G. W. Eaton of GD/Electronics-SD, and Glen A. Evans, son of H. L. Evans of Convair, won two of the 11 top prizes at the fair.

Eaton won an all expense paid trip to Cape Kennedy, Florida to see the blast-off of Apollo 11 in July and Evans received a $50 Savings Bond.

New Book on B-24 Now in Libraries

"Elusive Horizons," a new first person book by a former B-24 pilot, is available at both LF and KM engineering libraries.

Written by Keith C. Schuyler, newspaperman and free lancer, the book is based upon his wartime experiences, largely connected with flying Liberators, of which Convair built thousands for combat.

Electronics Anglers Plan Dinner, Election

Electronics-SD Fishing Club will hold its election of officers at a dinner meeting at 7 p.m. June 27 at CRA Missile Park. The outing will be limited to club members and their families.

CRAFTSMANSHIP

DO GOOD WORK

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, June 21. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.



RIDER-DRIVER—Belva Jacobs, employe benefits, demonstrates the use of the new Rider-Driver box now in use at employe benefits, Bldg. 8, Kearny Mesa. Persons wishing ride or rider can fill out cards and place them in appropriate slot. Employes can then check cards at their convenience.

Computer Idea Earns $1,355

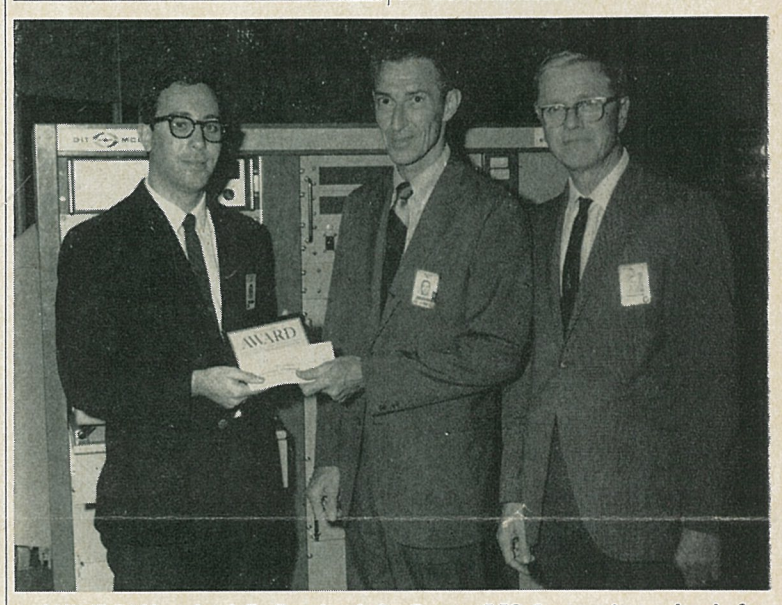
Joel F. Brody, Dept. 553-1 senior electronics engineer, has received a $1,355.20 Employe Suggestion award for a computer program which reduces the time needed to program a DITMCO 660 for wiring verification tests.

Convair recently acquired the DITMCO 660 to increase the available wiring verification test capability in support of the F-111 ground support equipment program.

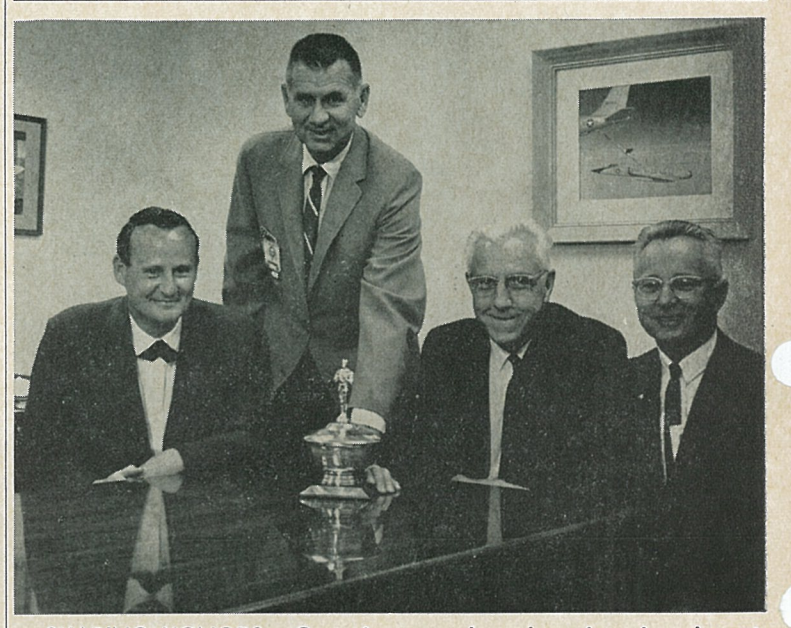
To program the DITMCO for verification of the wiring, the signal paths through the unit to be tested had to be determined. This was generally done by engineers from a "to-from" wire list and in some cases took as long as a month.

What Brody did was to develop, on his own time, a computer program so that the determination of signal paths could be done by computer.

Under the new system, the wire list for the unit to be tested is put on punch cards. These are fed into a computer which then prints out all the signal paths. The time is reduced from a month, in some cases, to as little as 15 minutes.



WINDFALL—Joel F. Brody, left, Dept. 553-1, receives check for $1,355 and certificate from F. D. Applegate, director of product design, for suggestion improving preparation of DITMCO circuit analyzer. B. A. Penners, Dept. 553-1 group engineer, is at right.



SHARING HONORS—Convair research and engineering department's new value control trophy was awarded for the first quarter of 1969 jointly to structural design Dept. 511 and structural analysis Dept. 587. Accepting for winning departments and cited for outstanding personal contributions were, from left, Joe LeVine, Dept. 587-0 senior structures engineer; Bill Service, Dept. 511-6 group engineer; Ed Hansard, Dept. 587-0 group engineer; Dick Greer, Dept. 587-0 design specialist.

HERE ARE YOUR REPRESENTATIVES

An important part of democratic government is the privilege of voters' making their opinions known by writing to representatives in Congress.

U.S. SENATORS

Sen. Alan Cranston — Senate Office Building, Washington, D.C. 20510.

Sen. George Murphy — Senate Office Building, Washington, D.C. 20510.

U.S. REPRESENTATIVES

35th District — Rep. **James B.** Utt, House Office Building, **Washington**, D.C. 20515.

* * *

36th District — Rep. **Bob Wilson**, 2235 Rayburn **Building**, Wahsington, D.C. 20515.

* * *

37th District — **Rep. Lionel Van** Deerlin, House Office **Building**, Washington, D.C. 20515.

Quackenbush Named Outstanding Student By San Diego State

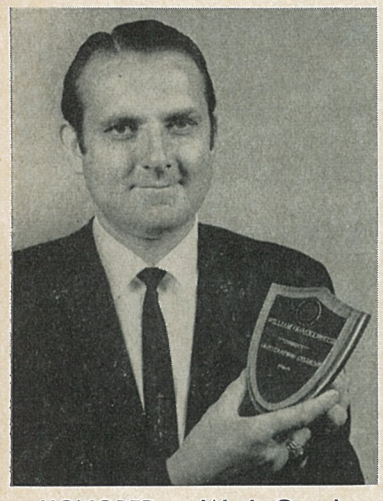
W. J. "Bill" Quackenbush, estimating supervisor in Convair's Dept. 195-4, was among 19 San Diego State College seniors honored as "outstanding students" at a School of Business Administration awards banquet May 16.

He received a certificate for outstanding achievement in the field of business law and finance and will receive his Bachelor of Science degree June 13 in the same field.

The "outstanding student" honor was based both on outstanding scholastic grades and recommendations from the faculty. The School of Business Administration has 2,700 students.

Quackenbush has been attending evening courses in working toward his bachelor's degree since 1961, studying at Southwestern College and Grossmont College before transferring to San Diego State.

He is married and has four children. He has been with Convair division's estimating department since 1961, serving as a price estimator, senior price estimator, and supervisor.



HONORED — W. J. Quackenbush, Convair estimating supervisor, displays award received for outstanding achievement at San Diego State College.

Grants Okayed By Con-Trib

A $9,000 pledge to Junior Achievement and a $5,000 grant to the Mayor's Council on Youth Opportunity were part of $21,106 approved by the Convair Employes' Con-Trib-Club during May.

The $5,000 to the Mayor's Council was for the 1969 summer swim program. The $9,000 pledge to Junior Achievement is payable in equal installments over a three year period. The club cancelled an earlier $2,000 grant to the organization when it approved the $9,000.

Other grants were:

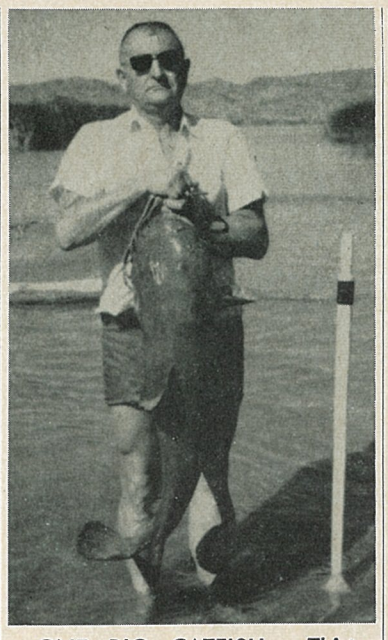
Epilepsy Society of San Diego, $2,000; Family Service Associations, $1,200; Girls Club of San Diego, $1,000; Vandenberg requests, $676; Muscular Dystrophy Associations of America, Inc., $600; Bayside Settlement House, $1,000; Youth for Christ-Lifeline Camps, $500; Elementary Institute of Science, $130.

Phone Operators Need New Numbers

Convair telephone operators are having trouble keeping tabs on people who are "on the move" within the division.

Charlotte Bowen, telecommunications supervisor, said switchboard operators work from a tab run which is updated weekly. Personnel with directory listings who move—even for a few weeks—should report the extension number at their new location by phoning ext. 1026 KM.

"Many people say they don't want to bother us when they are changing work locations for just a few weeks," she said. "Actually, they would be doing us a great favor."



ONE BIG CATFISH — Thirty-four pounds of catfish stretching 42 inches is held by P. R. Lewellen, Dept. 756-0. He caught fish after half hour struggle at 2 a.m., May 24 near Imperial Dam on Colorado River. He used a surf rod with heavy line. Fish may be close to Arizona record.

Credit Granted Via CLEP Tests

San Diego State College has announced it will grant college credit to adult students for achievement on College Level Examination Program (CLEP) general examinations.

United States International University also grants such credit.

CLEP examinations are given in English composition, natural sciences, mathematics, humanities, and social sciences-history.

They are administered locally one Saturday each month at San Diego State College at a cost of $15. Six hours are required for completion of all five. Michael Irwin is test officer. Next test dates are May 17 and June 21.

Application forms can be obtained at in-plant educational services offices.

E. June Warren, dean of admissions and records for San Diego State College, said up to 30 units (equivalent to one full year of college credit) can be granted for knowledge demonstrated on the CLEP tests.

Units awarded in each case will be determined by the college admissions office.

Research Project Features Fleetster

Three Convair men, Hank Arnold, Gordon Jackson and Larry Peterson, are researching material for an article on the Consolidated Fleetster airplane. The article will appear in the journal of the American Aviation Historical Society.

Fleetsters, Consolidated's first production land transports, were built from 1929-1932. Most were purchased by private fleets, individuals, the Army and one by the Navy. Some saw service as early air mail carriers.

The researchers are seeking any data, material, drawings or other information regarding the aircraft. Persons with items of interest may contact Jackson at LF ext. 1570.

CONVAIR SON DECORATED

Douglas Andrews, 21-year-old son of R. T. (Bob) Andrews, a 28 year veteran of Convair now in Dept. 842-0, has received the Purple Heart medal. A member of the Navy Black Berets Rivereens, he was wounded during action on the Van Co Dong River, South Viet Nam.

You Can Become Regular Bond Buyer For 50 Cents a Week

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is June 17. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS — Meeting June 18, 7:30 p.m.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—25-mile Lake Jennings ride, June 14, 9 a.m., meet at Fletcher Parkway Bowl.

BRIDGE — Duplicate bridge session each Friday, 7:30 p.m

CAMERA CLUB—Meeting June 15, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m

CHORUS — Rehearsals 7:30-9 p.m. Wednesdays. Recital June 22, Madison High Schol auditorium.

DELTA DIVERS — Meeting tonight (June 11) 7:30 p.m.

DRAMA CLUB—Organizational meeting tomorrow (June 12) 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting, 7:30 p.m., June 17, Gillespie Field Clubhouse.

GOLF—Cottonwood tournament, June 21-22.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING — GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Highway 80 and Lake Murray Blvd. Free family skate night July 10.

JUNIOR SCIENCE — Workshop June 20, 7:30 p.m

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

ORGAN CLUB—Meeting June 24, 7 p.m., Madison Residence, 11507 Woodside, Lakeside.

PISTOL CLUB—Shoot June 22, 9:15 a..m, SD Police Pistol Range, Federal Blvd & Home Ave.

RADIO CLUB—Meeting June 18, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB — Meeting tonight (June 11) 7:30 p.m. Monthly horse show, June 15, 9 a.m. CRA ring.

RIFLE CLUB—Senior shoot, June 22, 7:30 p.m.; Junior shoot, June 21, 1 p.m.; Gillespie Field Range.

ROCKHOUNDS—Meeting tonight (June 11) 7:30 p.m.
Rock shop now open in Frontier Town at CRA Missile Park.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB—Meeting tonight (June 11) 7:30 p.m., CRA Missile Park shelter house.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meet June 12, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays 5:15 p.m.

TROPICAL FISH—Meeting and workshop Mondays, 7:30 p.m.

WIVES—Luncheon June 18, 11 a.m., Kona Kai club, Shelter Island.

Rock Shop Opened In Frontier Town

CRA Rockhounds will install new officers at their meeting tonight (June 11) at 7:30 p.m. in CRA Clubhouse. Al Aron, Dept. 574-1, is new president.

Door prizes and a raffle for a two-barrel, three lb. gem tumbler are slated.

The club has opened a rock shop in Frontier Town of CRA Missile Park. Hours are Monday, Tuesday, Thursday 7-9 p.m. and Wednesday 11 a.m. to 1 p.m.

Lake Jennings Trip Slated by Cyclists

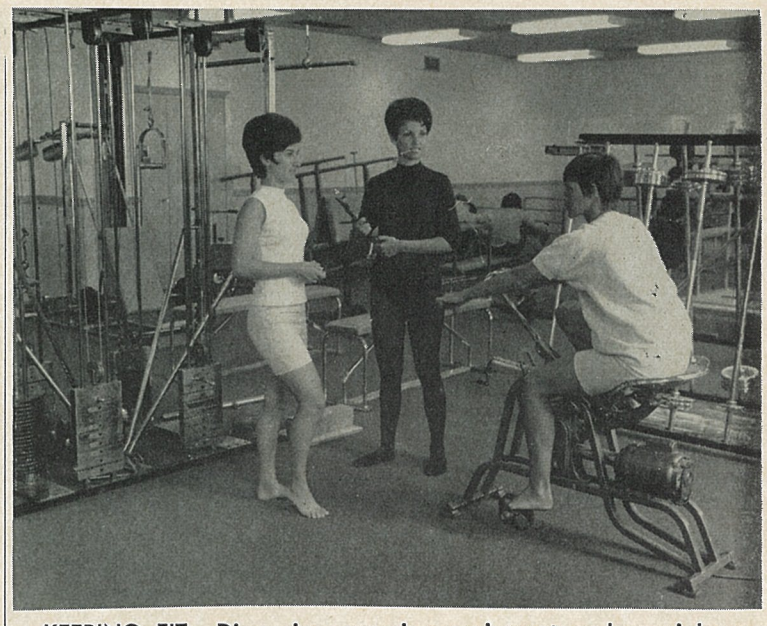
CRA Bicycle Club members will take a 25-mile ride to Lake Jennings and Flinn Springs Park beginning at 9 a.m. Saturday, June 14 from the Fletcher Parkway Bowl.

Leader for the ride is John Gacho, ext. 2253 LF or 465-9524. Riders participating have been asked to carry a light lunch.

New Dramatic Club Schedules Meeting

A new Convair Drama Club will meet for the first time at 7:30 p.m. tomorrow (June 12) at CRA Clubhouse.

It will be an introductory meeting to determine the future course of the club. All interested Convair employes and families are invited. For information call R. E. Garstang, ext. 2785 KM.



KEEPING FIT—Discussing exercise equipment and special programs for women at CRA Health Club are, from left, Mrs. Susan Lounsbury, Mrs. Marcy Thorsen, women's instructor, and Mrs. Susie Gilmour.

Health Club Offers Women Individual Exercise Programs

Attractive appearance and physical fitness are the primary aims of the CRA Health Club women's exercise program.

Club director Ralph Mansfield and his new assistant, Marcy Thorsen, will create individual exercise programs for women wishing to achieve these goals.

Both Ralph and Marcy stress the need for a regular program. Erratic participation, they say, can hinder rather than help an individual.

In addition to the exercise room, the club has a jogging track, fullbody sunlamps and sauna rooms.

Details on Health Club memberships can be obtained by phoning ext. 1111 KM.

Ride Club Show Set For Sunday

The CRA Riding Club will stage its monthly horse show beginning at 9 a.m. Sunday, June 15 at CRA ring, Kearny Mesa.

Admission for riders is $1 for each class. For rail sitters, the grandstand is free.

The show is sanctioned by the Horsemen's Executive Council and the Southern California Gymkhana Association. Silver Kromex Trophies will be awarded to first place winners and ribbons through tenth place in the junior classes and sixth place in open classes.

On June 11 the club will hold their regular meeting at 7:30 p.m. in CRA Clubhouse.

Baja Trip Subject Of Club's Program

A color slide program titled "From San Diego to La Paz in Four-Wheel Drive Vehicles" will highlight CRA Adventurers Club's June 18 meeting at 7:30 in the clubhouse auditorium.

The slides were gathered during a 20-day 2,000 mile trip down Baja California peninsula by club members John Smaldino, Bob Fay and Jorge Zorilla.

A question and answer session will follow. For further information contact John Anderson, LF ext. 1567.

Sports Car Club To Head For Hills

Convair Sports Car Club will travel to Pine Crest Sunday June 15 for a pancake breakfast for members and families, beginning at 10:30 a.m.

The club's meeting place will change tonight (June 11) from the LF cafeteria to CRA Missile Park shelterhouse. Meeting starts at 7:30 p.m. For further information call Marv Jensen at 283-6531, ext. 27.

Wives Club Slates Kona Kai Meeting

Convair Wives Club will hold their June 18 meeting in the Kona Kai club on San Diego's Shelter Island with social hour at 11 a.m. and lunch set for 12 noon. Guest speaker will be Beth Long on "Basic Care of the Skin."

Wives should have reservations for lunch in by 5 p.m. June 16 deadline. Call either Anita Klepach at 264-1013 or Lorraine Hudson, 278-0521.

Hostesses for the event are Vera Whitbey and Leta Robinson. For further information contact Alice Chapman at 286-7657.

Reduced Rate Marks Skating Sessions

CRA ice skating sessions at San Diego's House of Ice will open at reduced rates beginning tomorrow (June 12), according to Bud Davies, commissioner.

A flat-rate charge of $1 that includes skates reflects a 75 cent savings for adults and 50 cents for children. It is hoped that the reduction wil lenable large families and more potential members to participate.

The Thursday evening sessions run from 6:15 to 7:45 p.m. with the CRA rates in effect until 7.

A second free skating session is slated for July 10.

Medallion Winner Has Day at Convair

Marsha Williams, 17, a Fallbrook High School senior, visited Convair's Kearny Mesa plant May 28 as a result of having won a San Diego Industry-Education Council Free Enterprise Medallion award.

She spent the day with secretaries of various departments and toured the data processing center.

The awards program acquaints outstanding high school seniors with opportunities and qualifications for business and professional jobs. Each winner is hosted by a local business for a day.

Convair Team Wins First in IRC Shoot

Convair Pistol Club shooters took first and fourth places in .22 cal. competition in the May 25 IRC pistol matches. Teams from Solar and Naval Air took second and third.

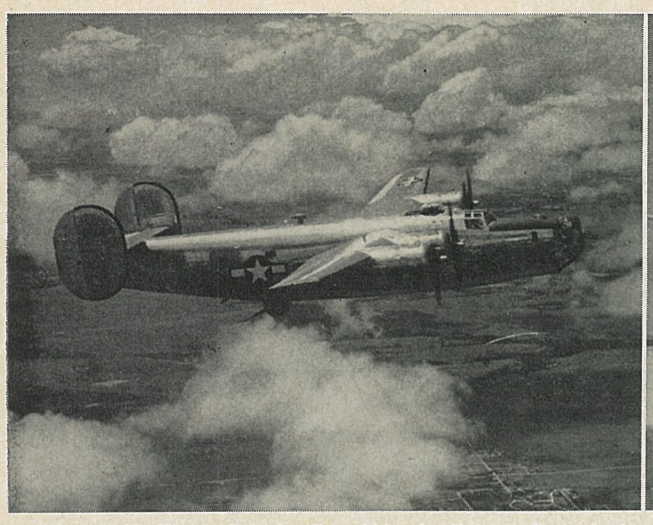
Convair shooters placed third in center fire.

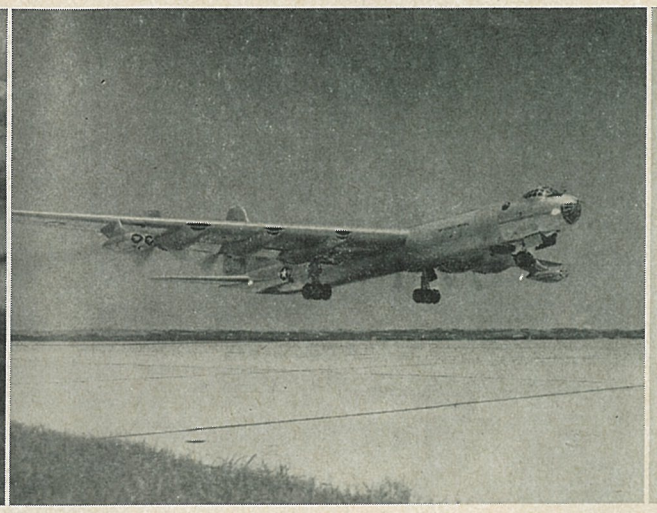
CRA teams include: Team 1—Roland Schneider, Jim Halfacre, Harry Black and Don O'Brien. Team 2—Dick Sutton, Charles Kropp, Robert Frazier and Bill Worthington.

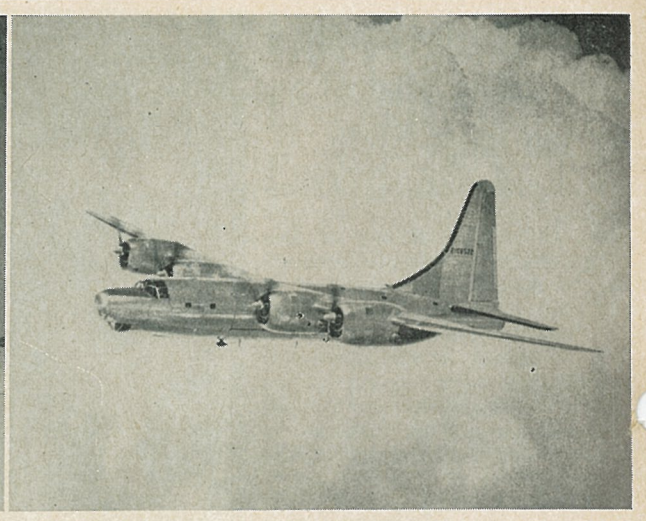
Six Named to Serve On CRA's Council

The following CRA council members were recently appointed by CRA President Dick Bowen to serve on the executive committee for the coming year:

Joe Harris, Del Dimmitt, Ray Mendoza, Jack Benedict, Tony Bernardini and Bud Davies.







SPLENDID TRADITION—Fort Worth division has designed and built some of the nation's finest aircraft since 1941. Above, left, the B-24 Liberator was a workhorse in World War II, while the B-32, right, saw service near war's end. The B-36 Peacemaker, center, served as Strategic Air Command deterrent bomber after war.

Fort Worth Division Looks Back On Crowded 28 Years of Aircraft Mfg.

With little fanfare, Fort Worth division passed its 28th birthday April 18 — and what a difference nearly three decades have made!

During World War II, B-24 Liberators rolled off the mile-long "bomber plant" assembly line at a dizzying pace. Peak output was 200 in January, 1944.

Today the division is gearing for massive production of F-111s, the world's first tactical variable wing fighter-bomber. The effort is being made in a thoroughly modernized aerospace facility — perhaps the best in the nation.

The "face-lifting" in the division's 28th year included adding nearly 1½ million square feet of floor space. "Under roof" area now measures about 146 acres, and that's big even for Texas.

Most imposing of the new structures is the two-story, 578,000-square-foot Engineering and Office Building, which can accommodate 6,000. Most engineers are now centrally located on the second floor.

Other additions include storage, warehouse and flight-line facilities, plus an ultra-modern processing facility. Automated machinery and manufacturing facilities are installed virtually plantwide.

The "all-out effort" at the division these days revolves around the F-111, destined to become the most versatile aircraft ever. Tactical Air Command pilots have already flown the aircraft successfully in low-level combat missions at night and in bad weather —a mission no other aircraft can perform. Before long, bomber versions of the F-111 will go into service with SAC.

Likewise, the division's earlier products have earned a niche in aviation history.

After turning out 2,734 B-24s and 250 C-87s (transport version) during World War II, the division built B-32s, which saw limited service in the Pacific near war's end.

Then came the 435 mph B-36, at that time the world's biggest land-based airplane. It could carry a bomb load of 84,000 pounds and fly 10,000 miles. Peacemakers reigned as America's prime deterrent for a decade. Fort Worth also built a jet version, the YB-60, which was flown successfully.

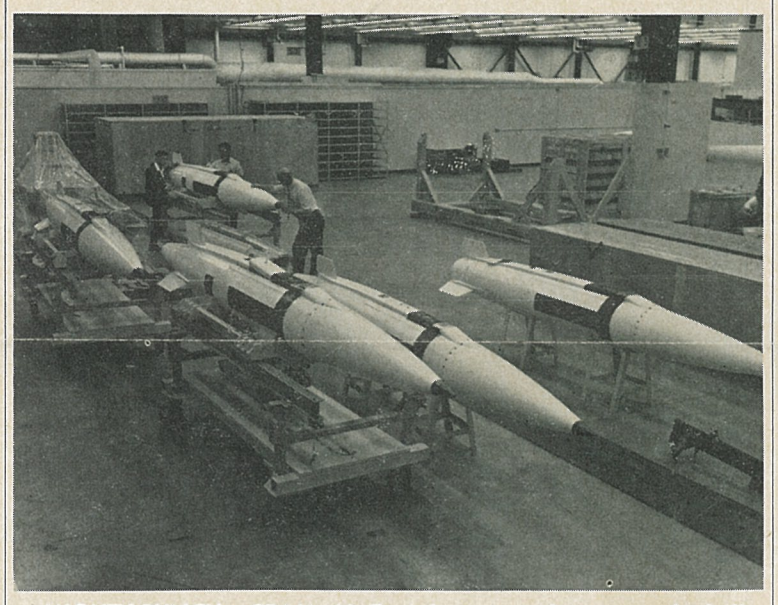
Later, Fort Worth engineers created the B-58 Hustler, Free World's first supersonic bomber, capable of Mach 2 speeds and intercontinental range.

The Air Force used the delta-wing bomber to set scores of speed and altitude records. On May 21, 1961, for example, a Hustler crew sped from New York to Paris in 3 hours, 19 minutes — a feat which probably won't be matched until supersonic transports go into service in the '70s. The Hustler, of course, is now a mainstay in SAC.

Other projects have included: the NB-36, first to fly with an operating atomic reactor aboard; special projects for weather aircraft; and a variety of "space" projects, such as construction of the Centaur and Surveyor nose cones, and booster sections for the Atlas missile, to name a few.

The division is Fort Worth's biggest employer. Average employment for the 1942-1968 period was 18,179, while total annual payroll during the period was $2,730,037,998.

With this rich tradition — and with one of the finest facilities and engineering departments in the nation — Fort Worth division appears ready to tackle just about anything the "hypersonic age" can offer.



MIGHTY PUNCH—SRAM, Air Force's newest air-to-ground missile, will be part of armament for Strategic Air Command's FB-111A. Its range allows pilot to launch it at enemy defense sites while he is still beyond their range.

Sweep Wing and Escape Module Advance Aviation Technology

At least two features of the F-111—the sweep wing and the escape module—have advanced aviation technology significantly.

The sweep wing's virtually flawless performance has been publicized widely. The escape module has apparently worked perfectly in emergencies. But this fact hasn't been so widely circulated.

"From all evidence, the module has functioned almost perfectly every time it's had to be used," says Bill Funk, division administrator of aerospace safety.

To date, 14 airmen have escaped since the first ejection Oct. 19, 1967, near Post Oak, Texas. "None of these men suffered serious injury," Funk says. "In fact, most of them escaped without a single scratch."

The lowest-level ejection was at 600 feet, with the plane traveling at about 100 miles an hour. Highest ejection was at about 9,000 feet at 500 miles an hour.

"Of course, the module is designed to function throughout the F-111's flight envelope, from ground zero to top speed," Funk says, "and we're confident it'll work perfectly under any condition."

The module—which includes the entire cockpit—is literally "sliced away" from a stricken aircraft by linear charges when a crewman pulls an eject handle. A drogue chute steadies the module as it hits the slipstream, then a larger chute deploys to float the module to earth.

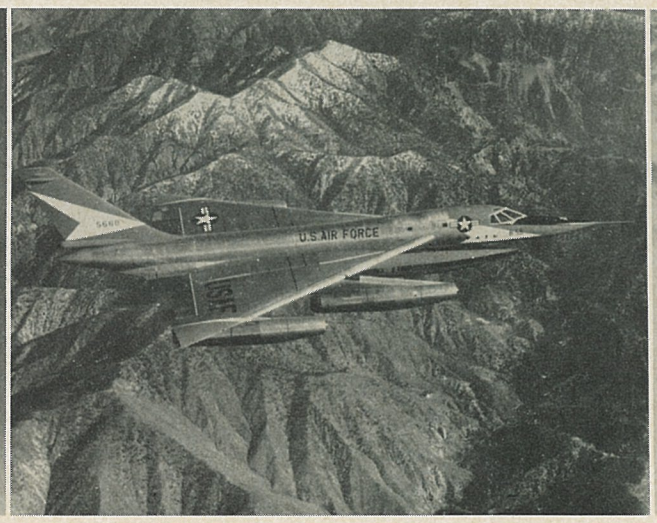
Since the module is completely self contained, crewmen can fly in so-called "shirt-sleeve comfort" throughout the plane's flight envelope. It is designed to protect crewmen in any climate.

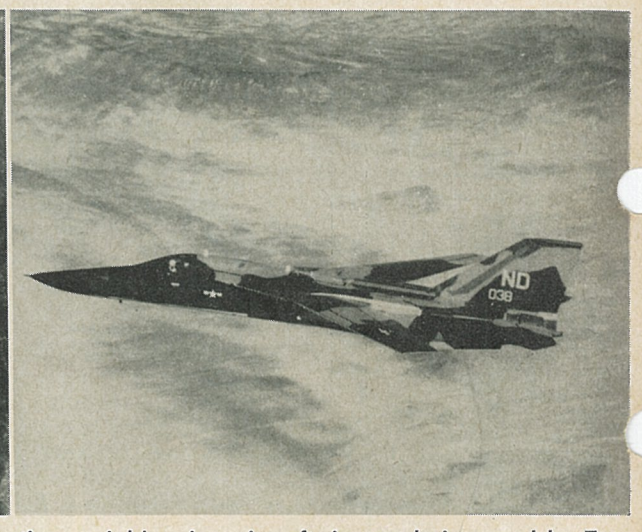
"The module serves as a ready-made insulated shelter on land or a sheltered seaworthy vessel on water," Funk says. "It can protect the occupants right up to the point of rescue.

"In addition, if retrieval of the module is possible, the entire cabin area of the airplane, with its valuable equipment, is available for salvage.

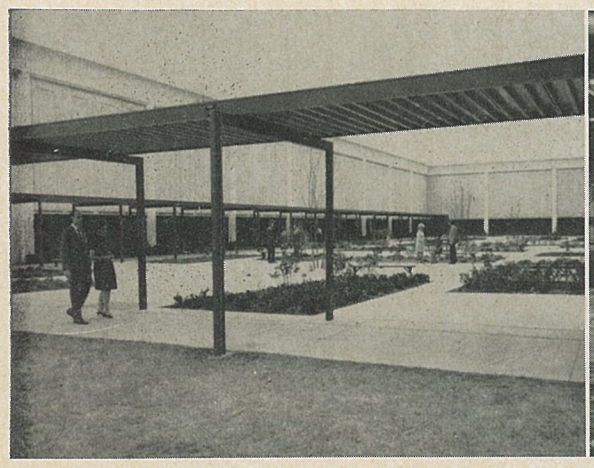
The first module to be used in an escape is now on display in the Air Force Museum at Wright-Patterson AFB, Dayton.

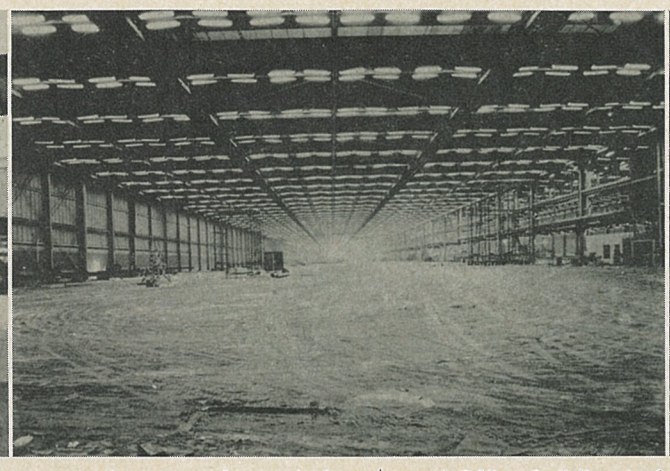


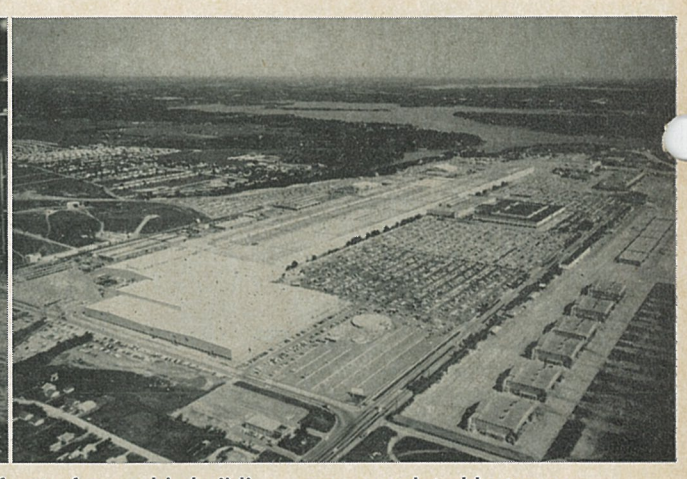




Shown at left is nuclear test airplane which was first to carry reactor aloft. In center is B-58 Hustler, nation's first Mach 2 bomber, now in service with SAC. Versatile F-111, first production variable wing aircraft, is now being used by Tactical Air Command, and bomber version is slated for SAC in near future.







Above, center, here's what facility looked like as construction neared completion in 1941. Today, division has about 146 acres "under roof" and is one of the most modern aerospace facilities in nation. Buildings with lighter roofs, plus Engineering and Office Building in front of assembly building, were completed last year. Campus-like atmosphere is captured in this patio area linking new Engineering and Office Building with old administration building.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 13 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, June 25, 1969



NEW SERIES—KLM Royal Dutch Airlines, which is observing 50th anniversary this year, was one of four major European airlines announcing plans to order McDonnell Douglas DC-10-30 aircraft with Convair-built fuselages.

Coast Guard Orders Five Convair Buoys

Convair division has been awarded a $720,000 contract for five Mark II navigational sea buoys for the U.S. Coast Guard.

The first is scheduled for delivery June 1, 1970, and will replace a lightship at Barnegat Reef off the New Jersey coast. The other four will be delivered at two-month intervals beginning Aug. 1, 1970.

Convair's prototype navigation buoy next month will begin its third year of Coast Guard service. It is moored about six miles east of Sandy Hook, N.J., at the entrance to New York Harbor and near the station formerly occupied by the Scotland lightship.

David B. Dewey, Convair project manager for Coast Guard buoys, said the new Mark II buoys will have about the same general appearance as the prototype but will include several operational and engineering design changes.

They will be powered by diesel-fueled engines and alternating-current generators instead of by propane-fueled engines and direct-current generators.

Their superstructures will be increased from three to four feet in diameter and 16 peripheral internal compartments in each of the steel hulls will be radial in design to provide more flexibility for storage of fuel, ballast, and urethane foam used for buoyancy.

Each will carry primary and secondary 7,500-candela xenon-gas flashing light systems, an incandescent-type obstruction light, a radio beacon, and a sound signal (fog horn) system, all to be government-furnished equipment.

The five buoys will have provisions for future addition of oceanographic and meteorological sensors and related equipment.

Like the prototype, each will weigh 50 tons and will be ballasted with sea water to 104 tons when "on station." Each will be equipped for single or three-point mooring by conventional anchors.

The 40-foot diameter steel hulls and 40-foot masts will be fabricated on the East Coast. Engineering, electronics systems, installation, and test activities will be handled by Convair personnel.

Dewey said the same program office team that developed the prototype buoy will handle development of the new ones.

D. K. Hall will be in charge of electronics systems, F. G. Brickson of electro-mechanical systems, and N. W. Schofield of structural design.

Four Convair officials were at Coast Guard headquarters in Washington early this month to negotiate the new buoy contract.

They were W. T. Dorrance, director of special programs; J. W. Petre, chief requirements en-

(Continued on Page 2)

Remote Sensing System Ordered For Detecting Air Pollutants

Convair has been awarded an $85,000 contract from the National Aeronautics and Space Administration (NASA) Electronics Research Center to develop and build a prototype remote sensing system for the detection of air pollutants.

The contract is the result of a feasibility study done last year under a $45,000 NASA contract plus funds provided by the company.

During the study last year the formation, occurance and chemistry of air pollutants was investigated as well as detection techniques and platforms for detection instruments.

The study determined that pollutants came from primary emissions, like industrial wastes, and secondary products formed during thermal and photochemical reactions.

The principal pollutants are sulphur compounds, nitrogen compounds, oxygen compounds, halogens, hydrocarbons, aldehydes and particulates. The more important ones in characterizing the type and amount of man-made pollution include carbon monoxide, sulphur dioxide, nitrogen dioxide and ozone.

The method found most suitable by Convair for monitoring

(Continued on Page 4)

European Lines Choose DC-10-30

Four major European airlines recently announced intention to place firm orders and options for 36 McDonnell Douglas DC-10 Series 30 aircraft.

They are KLM Royal Dutch Airlines, the Scandinavian Airlines System (SAS), Swissair, and Union de Transports Aeriens (UTA) of France.

Convair division will build and assemble fuselage sections for the DC-10-30 tri-jetliners, which will retain the same external dimensions as DC-10s already ordered by four U.S. airlines.

The decision announced jointly by KLM, SAS, Swissair and UTA is expected to result in an important contribution to U.S. foreign trade since its eventual value, including spare parts, is expected to exceed $600 million.

In a progressive step that will reduce maintenance and training costs, the four European lines previously had agreed to standardize on one configuration of a wide-fuselage tri-jet for their next-generation aircraft.

McDonnell Douglas officials said choice of the DC-10-30 was made after an extensive technical and economic evaluation without parallel in recent commercial airline history.

The DC-10-30 will have more engine thrust, greater range, more cargo capacity, and higher take-off weight than the original Series 10 DC-10. Payload will be increased to 104,000 pounds.

Each of the three General Elec-

(Continued on Page 2)

Noise and Shock Wear Nozzle

Somewhat the worse for wear after 11 years of subjection to winds of "super hurricane" force, Convair's high speed wind tunnel has received a new "nozzle" and two new "strainers."

David P. Cumming, Dept. 507-0 senior aerodynamics lab group engineer, said a 19-foot section of the entrance diffuser pipe, through which air at supersonic speeds first enters the tunnel, was replaced because cracks had developed in the original section.

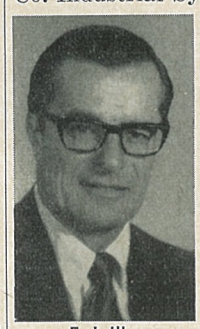
The new section has the same diameter — ranging from 24 to 48.8 inches—as the one replaced.

Two new porosity heads or "air strainers" were installed to re-

(Continued on Page 2)

Illes Appointed Electronics-SD Marketing Mgr.

Edward J. Illes, general sales manager for the Hughes Aircraft Co. Industrial Systems division in Los Angeles since 1966, has been appointed manager of marketing for Electronics-SD.


E. J. Illes

Illes reports to D. C. Prim, Electronics-SD manager, and will be responsible for sales, market planning and research, and promotion for all product lines and related activities in its research and development, systems and equipment groups.

He succeeds Frank P. Stoklas, manager of marketing since February, 1967, who has been appointed director of APX, a classified new-business program.

(Continued on Page 2)



"MAN-OF-YEAR"—W. E. Magnuson, right, receives Convair Management Club "Man-of-the-Year" award from W. F. Chana, outgoing club president, at June 11 meeting.

Wes Magnuson Cited by Mgt. Club For Outstanding NMA Service

W. E. (Wes) Magnuson, Dept. 140-1, was named Convair Management Club's Man of the Year at the Quadraster dinner June 11 at Bahia Hotel.

Magnuson received the award for his "outstanding service to the National Management Club, the Convair Management Club, his community and his company."

He is an NMA national director, past president of the Convair Management Club, has taught college level courses on management and was Convair's representative on the 1968-1969 United Crusade Drive. He is chief-special projects, reliability control administration and chairman of Convair's Craftsmanship Program.

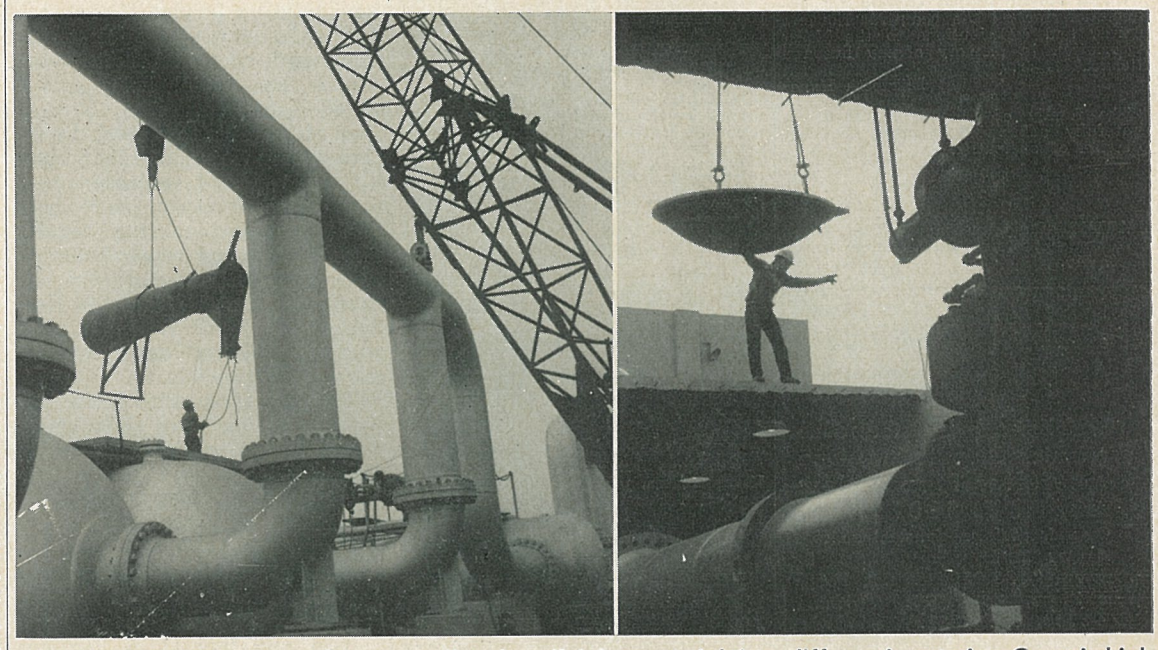
The presentation was made by outgoing president Bill Chana. Also at the dinner, scholarships were presented to four sons and daughters of Convair employes, President's awards, Director's awards, Mr. Idea and Booster of

(Continued on Page 2)

Tool Store at LF Moves to Bldg. 33

The employes' tool store at Lindbergh Field has been moved from Bldg. 32 to Bldg. 33. Operated by Western Metal Co., the tool store is open from 9 a.m. to 4:30 p.m. weekdays.

Other tool stores are located in Bldg. 5 at Kearny Mesa and Bldg. 2 at Air Force Plant 19.



WIND BREAKER—One of two new "strainers" (photo at right) to diffuse air entering Convair high speed wind tunnel is moved into position for installation. At left, old 19-foot section of wind tunnel entrance diffuser is removed for replacement.

Coast Guard Orders Five Convair Buoys

(Continued from Page 1)
gineer for marine systems; John Holter, contracts administrator, and Dewey.

The prototype buoy at Sandy Hook has operated continuously for two years except for brief refueling and maintenance periods. It "rode out" several storms last winter, operating efficiently in 60-knot winds, 13-foot waves, and temperatures that dropped to 1-degree F.

The navigational buoys are designed to withstand hurricane conditions—150-knot winds, 60-foot waves, and 10-knot currents.

The prototype, designated Two Alpha (2A), has its location charted on maps of all major domestic and foreign vessels and ships take navigational "fixes" on it during the day.

At night, Two Alpha can be identified by its flashing light code—a one-second flash every four seconds. During foggy weather, it emits a two-second blast every 20 seconds.

The old red-hulled Scotland, which Two Alpha replaced, was built in 1907 and guided ships into New York Harbor for 60 years.

Summer Spanish Classes Offered

Summer Spanish classes are in the offing for General Dynamics employes.

Sponsored by the San Diego City Schools and taught by Convair's Jim Hardison, classes will meet Mondays and Wednesdays, 6:30-9:30 p.m. at Clairemont Adult High School, Room 111.

The free sessions are designed for the beginner and traveler and started Monday, June 23. Registrations are still being accepted for the course slated to wind up July 30.

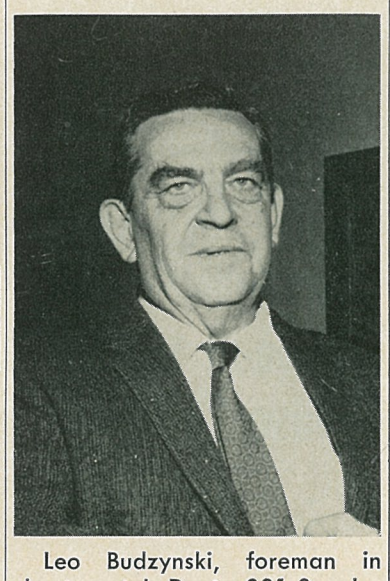
To register call Clairemont Adult High at 274-3422 or register at tonight's class.

SWEENEY ELECTED AUDITOR TREASURER

Darwin J. Sweeney of Convair's Dept. 199-0 has been elected treasurer of the San Diego chapter, Institute of Internal Auditors.



35 YEARS—Frank O'Connor, left, coordinator in production control Dept. 05919, recently received 35-year-pin from Jack L. Bowers, general manager. He joined Consolidated Aircraft Co., Convair's predecessor firm, in 1934 in Buffalo, N.Y.



Leo Budzynski, foreman in sheet metal Dept. 001-0, also received 35-year pin recently. He, too, is veteran of Buffalo and moved to coast with Consolidated.

Illes Joins Electronics

(Continued from Page 1)
In his new position, Illes will work to broaden Electroncs-SD's marketing base and product lines, which now include radar, tracking and data systems and a variety of classified military projects.

While with Hughes, Illes directed sales and marketing of numerical controls, N/C machining centers, and N/C wire terminator systems, as well as for automatic assembly systems.

He previously served as manager of marketing for the Northrop-Ventura aero instrument facility in North Hollywood from 1964, to 1966, vice president and director of marketing for Power Devices, Inc., in Chatsworth from 1962 to 1964, and director of marketing for F.I. Industries in El Monte in 1961-62.

During his 20 years in industrial marketing management, Illes has handled sales of products ranging from transducers weighing less than a pound to giant machine systems with units weighing more than 20,000 lbs.

He won seven major awards for advertising and promotion campaigns last year, including two Silver Awards from the National Machine Tool Builders' Association.

Illes studied business administration at USC and also attended UCLA and Western Reserve University. He speaks French and German and served as an interpreter for the U.S. Army while assigned to an armored reconnaissance troop in Europe during World War II.

European Lines Choose DC-10-30

(Continued from Page 1)
tric CF6-50A engines on the Series 30 will provide 49,000 pounds of takeoff thrust. Range will be extended to 5,500 statute miles, and maximum takeoff weight will be increased to 530,000 pounds.

DC-10-30s will accommodate 253 passengers, 24 in a first-class section and 229 in a spacious tourist section. The two sections of the passenger cabin, more than 18 feet wide, will be separated by a center for food and beverage storage and preparation.

The underfloor area occupied by the galley in the initial DC-10 design will be utilized in the Series 30 to increase the cargo capacity to 46,400 pounds in the 4,640-cubic-feet available. Cargo may be loaded in 16 cargo containers, each a half-fuselage in width, in the forward section and 10 in the aft section.

An enlarged forward cargo door also will make it possible to carry five cargo pallets, interchangeable with those on current DC-8s, in the forward section in lieu of the 16 containers.

Cockpits, including instruments and electric components, will be identical on the KLM, SAS, Swissair and UTA tri-jets. Exterior markings and interior styling and decor will reflect the individuality of each of the airlines.

Jack Hurt, Convair DC-10 program manager, said selection of the DC-10-30 by the four airlines was an "extremely significant breaktkhrough into the European market" and "is a major step in insuring success of the DC-10 program and of Convair's participation in it."

He said engineering for structural modifications and configuration changes for the Series 30 is expected to be instituted this summer.

KLM, headquartered in Amsterdam, is the world's oldest airline in terms of continuous service and is observing its 50th anniversary this year. It now flies to every continent.

SAS was formed in 1946 and individual airlines of Sweden, Norway and Denmark were drawn into the system by 1951. It began transatlantic service in 1946 and pioneered polar and arctic routes.

Swissair, headquartered in Zurich, was founded in 1931 by merger of two Swiss lines and now has routes to the Americas, Africa and the Far East in addition to its continental network.

UTA merged with TAI in 1963 to become France's second largest airline. Its routes extend from Los Angeles to Paris and cover the South Pacific, Australia, India, Africa and Europe.

Noise and Shock Wear Nozzle Of Wind Tunnel

(Continued from Page 1)
place a grid of one-inch-thick bars that also had cracked from intense noise and shock forces during its decade of service.

The porosity heads have the appearance of giant strainers. Each was formed from solid domes of steel and are filled with hundreds of precision - drilled holes to break up and equalize the flow of high speed air through the tunnel.

Bill Just and Irvin Olson, both Dept. 508-0 structural design engineers, designed the new shock-mounted "strainers," which are expected to reduce aerodynamic disturbances in air flow through the tunnel better than the original grid.

The smaller 1½ - inch - thick "strainer" has holes parallel to the center line of the tunnel to break up the air mass as it enters. It has a 50-inch diameter.

The larger two-inch-thick "strainer" about 20 feet downstream has radial holes drilled at 90-degree angles to the contour of the dish to spread the air flow evenly throughout the tunnel.

Cumming said replacement of the diffuser section and shock grid was part of the regular maintenance and repair program for the high speed tunnel, located at General Dynamics' Harbor Drive facility. Installation was handled by Bannister Steel Inc. of Chula Vista.

The high speed wind tunnel has been operating three shifts daily, primarily in support of Fort Worth division F-111 and proposal projects. Don Ostenso is supervisor of operations.

Cumming said the tunnel has had about 1,400 occupancy hours this year.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Wes Magnuson Cited by Mgt. Club For Outstanding NMA Service

(Continued from Page 1)
the Year awards were presented and new officers installed.

Fritz Hauf, NMA president, was the main speaker. He presented Award of Honor certificates to a number of club members "in recognition of extraordinary service and leadership." The awards went to:

W. M. Alexander, Mike Alianelli, Barney Ambrose, Al Amison, Bob Ames, C. K. Anderson, F. B. Anthony, Dick Archibald, W. P. Archibald, Bob Bailey, Carl Banke, Reggie Becker, Jack Benedict, Frank Berry, E. J. Boggus, R. C. Bonine, Joe Bowers, Lloyd Boyles, Art Braidic, R. E. Brown, J. Doherty, Ray Calen, E. W. Carter, Cy Campbell, Bob Chambers, Jerry Christ, F. P. Cook, George Cowan, Less Dassoff, Herb Day, Al Delos, W. J. De Vore, V. P. Donnelly, Durf Durflinger, Doc Deane, A. E. Divine, C. C. Dragile.

M. I. Edelstein, Ray Eichmann, John H. Eldridge, D. E. English, J. A. Fager, Jim Fielder, Edward Ford, Gene Fox, Bob Franklin, Larry Gilmore, Freeman Graham, Paul Green, W. J. Hammond, Gene Harmon, Bob Harris, Larry Harrison, S. E. Hartzler Jr., T. R. Harwood, D. A. Heald, Bob Herold, Walt Hicks, Gertrude Hunter, E. L. Jacobson, Ezra Johnson, C. A. Johnston.

R. W. Keehn, Stan Krebs, D. T. Kuczon, Chuck Lacy, Dr. N. W. Lamb, J. E. Lauen, Claude Leis, Harry Lund, M. L. Male, Willard Martin, R. C. McKee, H. A. Mellinger, Jack Miller, R. Montague, R. A. Nau, B. J. Neal, Gerry Nuss, Bill Ochodnicky, Russ Oexner, Art Olderich, D. R. Pardee, Jim Pate, Dick Peck, John Pendergraft, G. L. Peyton, W. B. Phillip, Bob Pullen, J. I. Reavely, W. A. Reinman, G. G. Rosbrook.

W. H. Schaefer, R. W. Shaffer, Jack Scanlon, Chuck Simmons, Ferd Spieker, L. W. Springer, C. H. Stadler, E. J. Velton, Ken Ward, J. C. Watt, Leroy Watson, John Wickham, J. M. Wild, Sarah Williamson, Jim Wills, Lyle Wood, R. V. Woodle.

System Established For Notices at LF

Bulletin boards for employe announcements and "for sale" cards at Lindbergh Field plant will be subject to the following regulations beginning July 1, according to Paul Veal, manager of industrial relations at LF.

A notice will be placed on each board listing the following: Cards available at each bulletin board location and employe benefits. Post three-by-five cards only. Advertising by business establishments not permitted. Employes must date and post cards. Remove cards two weeks after date shown on card. Updated cards will be removed immediately. Boards will be available for employe use only.

Board locations at LF are: Bldg. 51—3rd floor at columns 3-A and 3-D; Bldg. 5—2nd floor at columns 2-C and 5-2-A; Bldg. 8—1st floor column E-10; Bldg. 2—1st floor column C-13; Bldg. 1—1st floor column B-24.

Log Book Entries

Awards
CONVAIR

Employe Suggestion awards approved for the week ending June 6.

Dept. 149, M. L. Atkins, $137.20; 027, R. J. Baldwin, $15; 832, J. E. Berg III, $27.20; 144, F. J. Bourgeois, $15; 031 T. Castro, $145.30; 460, M. V. Faktor, $15; 059, J. H. Gehagen, $15; 027, R. J. Gearhart, $17.10; 149, C. E. Giesken, $42.20; 027, W. T. Higgins, $117 (two awards); 401, D. P. Lundy, $21.60; 144, W. G. Lux, $21.20; 001, E. C. Mackey, H. G. Mondy, $12.85 each (joint award); 452, J. D. Markussen, $79.70.

Dept. 149, C. A. McKinney, $15; 958, W. C. Nagy, $39; 027, M. W. Pardue, $310.30; 027, T. H. Parker, $66.90; 454, C. B. Pierce, $15; 780, F. K. Prather, $15; 059, J. M. Rivera, $281.54; 831, J. D. Rogers, $15; 142; W. L. Russell, $336.50; 045, K. Schiel Jr., $20.10; 019, D. Sempsrott, $33.30; 027, Stonebreaker, $66.90; 027, C. W. Westhydeman, $66.80; 401, D. R. Willoughby, $15; 045, R. F. Yturralde, $15; 027, M. J. Zaragoza, $191.80 (two awards); 780, S. W. Zeiss, $15; 027, H. M. Zeno, $17.10; 144, J. Zoll, $69.

Empolye Suggestion awards approved for the week ending June 13.

Dept. 149, J. S. Adams, $181.30; 780, P. A. Ashcraft, $34.30; 059, G. E. Colville, $76.80; 059, I. Corbett, $50; 027, J. G. De Lara, $34.10; 780, E. F. Echols, $32.80; 401, V. P. Edmundson, B. J. Jeffries, $46.50 each (joint award); 027, P. J. Estrada, $60.80; 015, G. E. Finley, $16.50; 144, H. M. Gallant, M. J. Sorg, $7.50 each (joint award); 059, D. V. Haynes, $1,142.90; 027, J. R. Haynes Jr., J. H. Parsons, $50.30 each (joint award); 780, E. J. Henderson, $15; 027, J. L. Killeaney, $27.10.

Dept. 027, F. H. Kleckner, $118; 756, J. J. Monty, H. E. Naish, $22.10 each (joint award); 452, J. D. Markussen, $79.70; 027, D. R. Noon, $32.40; 019, R. N. Noyes, $120.90; 002, C. O. Owens, $30; 027, J. H. Parsons, $67.20; 401, N. E. Rodgers, R. A. Taylor, $45.35 each (joint award); 401, L. Stivers, $51.10; 015, J. T. Tattoli, $15; 027, H. F. Thompson, $17.10; 144, E. M. Walker, $15; 835, J. L. Williams, $537.70; 059, P. Wilson, $267.20.

Personals
CONVAIR

Your comforting expression of sympathy is deeply appreciated by the family of Capt. George E. Duffy USN (Retired Nov. 1958).

* * *

The family of Joseph R. Emmons acknowledges with deep appreciation your kind expression of sympathy.

Thyra Emmons and family

* * *

Words simply cannot express my appreciation for all the beautiful flowers, plants, and contributions to the Heart Association in memory of my husband Richard Hager.

Elizabeth Hager

* * *

The family of Charles M. Huffman gratefully acknowledges your kind expression of sympathy.

Births
CONVAIR

AUTIO—Daughter Laura, 7 lbs. 8 oz., born June 4 to Pete and Frances Autio, Dept. 519.

Papers Presented
CONVAIR

BAILEY — R. E., Dept. 578, T. M. WOOSTER, Dept. 574. "On line CRT display systems developed at General Dynamics / Convair." ISA / 15th National Aerospace Instrumentation Symp., Las Vegas, Nev., May 5-7.

FAGER — J. A., Dept. 581, "Space broadcast users." EIA/Satellite Telecommunication Subdivision Meeting, Los Angeles, Calif., May 12-13.

LUDWIG — C. B., Dept. 596. "An infrared scanning spectrophotometer for high-resolution atmospheric emission measurements" and "Infrared correlation instrument for the remote measurement of effluent gases in smokestacks." Symposium on Advances in Instrumentation for Air Pollution Control, Cincinnati, Ohio, May 26-28.

NULTON—H. G., Dept. 145. "Management's acceptance of systems safety." Systems Safety Society Symposium, Claremont, Calif., May 13.

ROTHE—E. W., Dept. 596. "Intermolecular potential energy measurements via thermal molecular beam scattering." Gaseous Interactions Meeting, Aberdeen, Md., May 6-7.

STEPHENS—Paul B., Dept. 584. "Characteristics of a dual chamber solid and a fluid-controlled solid for post boost propulsion." Chemical Propulsion Information Agency/4th Solid Propulsion Conference, Chicago, Ill., May 20-22.

WRENCH—E. H., Dept. 596. "A hard wire rotating coupling." University of Santa Clara, Jet Propulsion Laboratory of the California Inst. of Technology/4th Aerospace Mechanisms Symp., University of Santa Clara, May 22-23.

Papers presented at the TMS-AIME The Metallurgical Society of American Inst. of Mining, Metallurgical and Petroleum Engineers Meeting, Pittsburgh, Pa., May 11-15.

ADSIT — N. R., Dept. 572. "Shear strength of aluminum-boron composites."

DUFFY—E. R., M. S. HERSH, Dept. 572. "Development of fabrication methods for aluminum-boron composite aircraft structures."

Papers presented at the Aerospace Medical Association/40th Annual Scientific Meeting, San Francisco, Calif., May 5-8.

ARMSTRONG—R. C., Dept. 592. "Effect of environmental pressure on biological stress from vibration."

BURNETT—J. R., Dept. 592. "Potentials of the aeromedical evacuation system in the overall treatment process for the seriously ill patient."

Papers presented at the Society of Aeronautical Weight Engineers/National Conference, San Francisco, Calif., May 5-8.

BENSON—R. L., E. I. SEIDEN, Dept. 588. "Airframe cost element prediction and application to cost control."

CADDELL—W. E., Dept. 588. "On the use of aircraft density in preliminary design."

HOOD—E. R., Dept. 588. "A new concept of commercial transport flying simulators."

NIESLEY—J. E., Dept. 952. "Launch vehicle weight growth cost effects as determined using a market analysis program (MAP)."

Papers presented at the American Society for Quality Control/Annual Tech. Conf. and Exhibit, Los Angeles, Calif., May 5-7.

GELLES—P. E., Dept. 144, "Quality motivation through community education."

MILTON—L. A., J. D. SCHERKENBACK, Dept. 141. "A radiographic third dimension using microdensitometry."

Rider-Driver
CONVAIR

RIDE WANTED—From Del Rey St., Pacific Beach, to Lindbergh Field plant, 8 a.m. to 4:45 p.m. shift. Call Theresa Iraci, ext. 678 LF.

RIDE WANTED — Clairemont Quad (Clairemont Drive and Iroquois St.) to Kearny Mesa plant, 7:30 a.m. to 4:15 p.m. Call Swank, ext. 3136; home 276-1972.

Deaths
CONVAIR

HENRIE—Clive, retired April 3, 1965 from Dept. 92, died May 30. Survivors include his wife, Pearl, three daughters and 15 grandchildren.

HUFFMAN—Charles M., retired Aug. 30, 1963 from Dept. 42, died June 4. Survived by his wife, Fonnie.

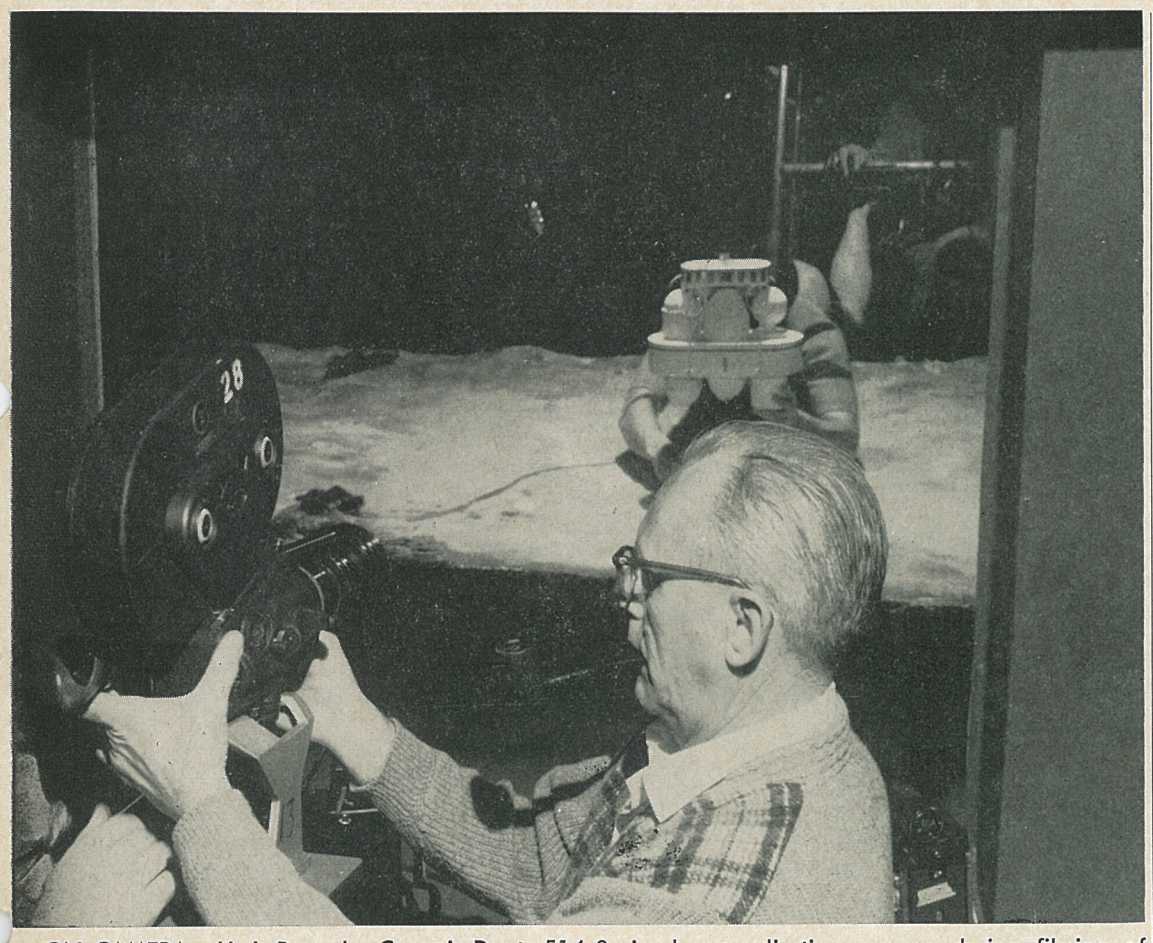
LORENZO—Ralph A., retired June 1, 1959 from Dept. 206, died May 27. Survived by his wife, Katherine.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.



ON CAMERA—H. I. Reavely, Convair Dept. 516-0, is shown adjusting camera during filming of special underwater movie. R. H. McPhee of Corporate Headquarters is in scuba gear, placing model of Deep Ocean Manned Instrument Station.

'Voyagers' to Ocean Depths View 1980 Technology

Audiences at the annual Marine Technology Society meeting last week in Miami cruised 5,000 feet below the ocean surface in a General Dynamics submarine to watch underwater scientists of the future at work—but never left the Hotel Fontainebleau Convention Center.

A movie dramatizing expected undersea technology of the 1980s, produced recently by Convair division to conform with the conference theme, "The Next Decade," was shown in a simulated mock-up of a 1980 submarine, the General Dynamics' "Seastar."

Front panels of the mock-up rolled back to give the audience a "Jules Verne view" of the undersea activity of the future.

Diving sequences for the film were shot off the Southern California coast. Undersea activity scenes were filmed with Electric Boat division-built models in Convair's life sciences underwater test facility.

As the "Deepstar" descends, a sister sub, the "Sea Search," is depicted on a holographic mapping mission while also functioning as a mobile experimental data collection center and performing tasks such as taking mining core and biological samples and doing acoustic research.

Between 2,600 and 5,000 feet underwater, the "1980 voyagers" encountered a team of scientists descending to the ocean floor in a Deep Ocean Manned Instrument Station (DOMAINS).

DOMAINS is shown as a three-module structure, with a middle cylinder, the living-laboratory area and two side containers housing power sources and coring system controls, and is depicted as an outgrowth of the Navy's Manned Underwater Station (MUS) study by General Dynamics.

In DOMAINS, an anchoring device is lowered to the ocean floor and the station is winched down. The anchor incorporates a self-propelled crawler mechanism to give the station mobility.

At 5,000 feet, an underwater oil platform with a service capsule servicing six oil well heads is shown. The capsule is lowered to the platform on a cable to inspect equipment, make repairs, and adjust oil flow from the wells.

Last of the futuristic devices shown was a Manned Resource Recovery System, consisting of tractor and perforated container units, for use in recovering minerals as it crawls along the ocean floor.

A digger with rotary spines in the aft section of the tractor unit, the film narrator explains, claws into the sea bed to extract mineral modules which are then piped to the second vehicle. Silt escapes through the perforations, leaving the heavier minerals. The container is raised to the surface by cable when filled.

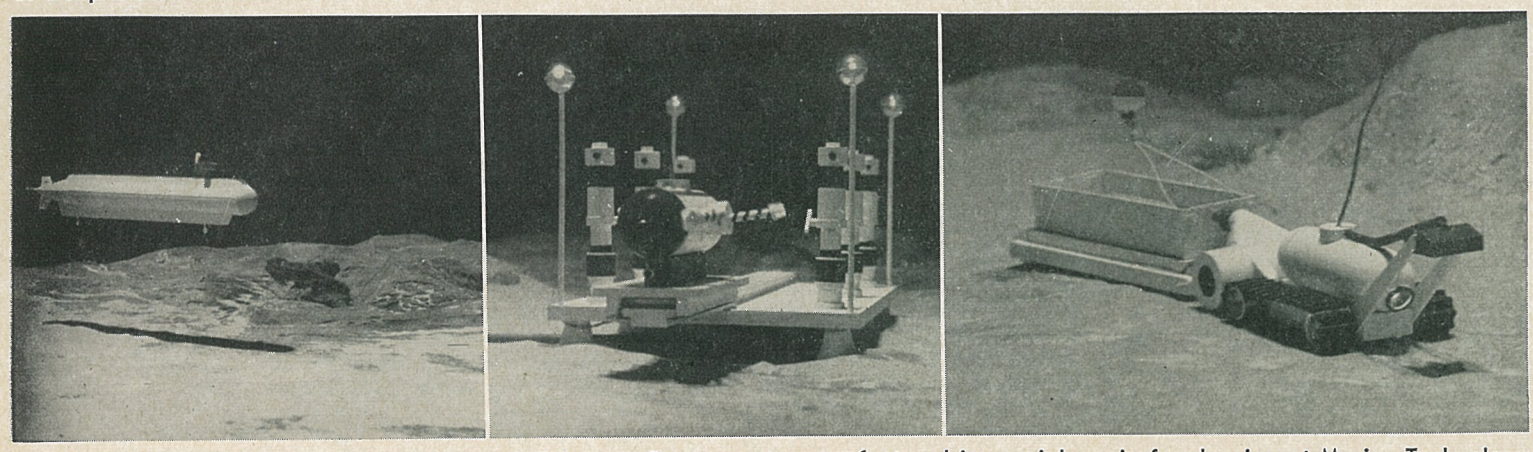
The "film journey of the future" took 12 minutes and was produced to supplement displays of marine activities by General Dynamics divisions.

Raymond H. McPhee, General Dynamics motion picture producer-coordinator, was producer and director. Thomas Gavin, also of Corporate Headquarters, wrote the script.

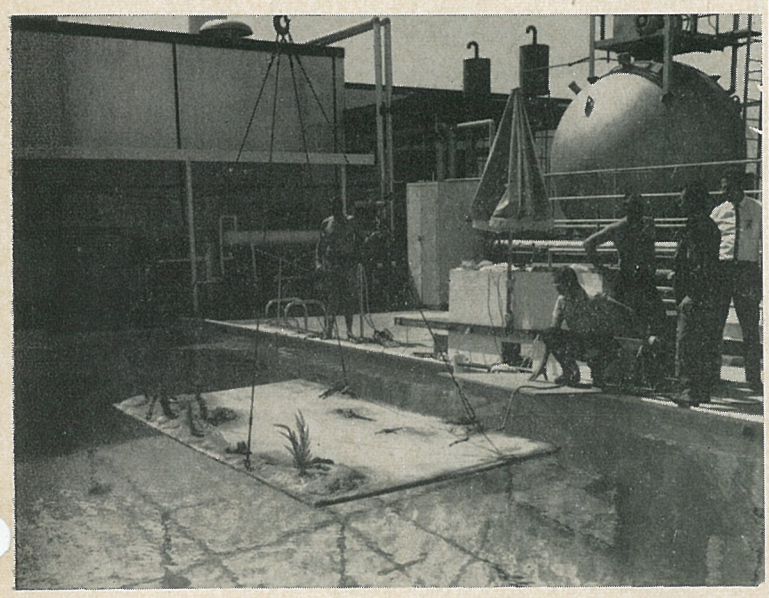
William Carter of Convair was cinematographer. Underwater sets were designed and constructed under the direction of Robert Montague, Convair's chief of motion pictures and television.

Robert Brazell and Richard Wolf of Convair's life sciences section aided the production crew.

Montague said the film was shot on 35-mm film, larger than the 16-mm usually used for industrial photography, since it was thought future use and outside distribution of the film would make that more desirable.



UNDER THE WAVES—Models of Manned Resource Recovery System, an oil well platform (center) and a submarine of future were featured in special movie for showing at Marine Technology Society meeting in Miami.



MOVIE SET—Miniature ocean floor set was used in filming underwater movie. Shown at poolside are Robert Brazell, Convair Dept. 592-0, G. B. Wood, Dept. 988-2, R. L. Wolf, Dept. 592-0, R. H. McPhee, Corporate Headquarters, R. M. Quittner, Dept. 516-0.

Rugged Plane

Model 240's First Pilot Flies Test Hop Again, 20 Years Later

History literally repeated itself recently for Lindy LeVine, Convair test pilot and flight captain.

In April, 1949, Lindy, a 13-year Convair veteran at that time, occupied the co-pilot's seat aboard Convair-Liner 240 No. 160 at San Diego for its 40-minute check flight prior to delivery.

Last month, 20 years later, Lindy was in the cockpit of the same plane—returned to Convair for refurbishing.

In the meantime, Lindy had logged 3 million air miles and the airplane had done some travelling too, serving two airlines, and an electronics firm and a brewery as an executive plane.

"It wasn't as much the coincidence as it seems," Lindy commented. "I've had the pleasure of repairing, crewing or flying almost every type of airplane Convair produced after 1936 when I joined the company."

As a boy LeVine was determined to be a railroad engineer, but Charles Lindbergh changed that and following graduation from Parks Air College he joined Convair as a mechanic and continued flying lessons on the side. Soon he was a flight mechanic on PBYs and PB2Y-2s. Later it was B-24s and several experimental planes and still later the XB-32. When B-32s joined action in the Pacific Lindy was aboard the first one and flew many missions as Convair flight representative.

After the war he flew Stinsons, and when the giant B-36 went into production he was assigned to Fort Worth division as test pilot. Lindy was aboard for one mission that set a record of 51 hours and 20 minutes in the air, without refueling.

Then followed years of wearing many hats, production flight testing for all models of Convair-Liners including 880s and 990s, pilot training and delivery flights all over the hemisphere.

In air distance covered over the years, the Astronauts have nothing on Lindy. He's flown the equivalent of four round trips to the moon!



TRAVELING MAN—Lindy LeVine, Convair test pilot and flight captain, stands with CV 240 in background, a plane he helped check out in 1949, and again in 1969.

Master's Degrees Awarded to Ten

Ten Fort Worth division employes recently received master's degrees in business administration from Texas Christian University. They are:

C. T. Barrett, Dept. 9-1; G. D. Boesch Jr., 5; E. W. Robert, 064; K. D. Gentry, 187; F. L. O'Brien, 102; W. A. Token, 186; A. O. Watson, 086; H. T. Whitworth, AF; A. E. Wiley, 10; and M. H. Fleer, AF.

Volume Purchasing Planned For Data Process Supplies

"Substantial savings" through volume purchase of data processing supplies is the goal set by General Dynamics' newly formed data processing coordinating committee.

"We will establish uniform requirements and preferred sources for procuring continuous forms, cards, printer ribbons, disk packs, magnetic tape and forms-handling equipment," said W. W. Aldredge of Fort Worth division, committee chairman.

The committee reported that savings of up to $250,000 can be realized on volume purchase of continuous forms alone.

Formed recently at Fort Worth, the committee is comprised of representatives from Convair, Electric Boat, Fort Worth and Corporate Headquarters and will be expanded to include representatives from business and scientific installations at all divisions.

Attending the implementation meeting were D. A. Alexander, C. J. Fimmano and Carlton Barlow of Corporate Office; R. P. Curry, C. C. Utley, A. M. Baker, J. W. Grigsby and Aldredge of Fort Worth; G. R. Jacob of Convair; R. G. Liepold and G. J. Siefert of Electric Boat.

C-5 Galaxy Sets New World Mark For Weight-Lifting by Aircraft

U.S. Air Force C-5 Galaxies with Convair division-built empennages recently established two records.

One of the C-5s set a world weight-lifting record for aircraft when it lifted off with 728,100 pounds—100 pounds more than its design gross takeoff weight.

C-5 No. 2 completed its first transcontinental flight and landed at Edwards AFB, Calif. in 1,600 feet—six times its own length.

Galaxy 2's cross-country trip took 3 hours 48 minutes and was made at 31,000-foot altitude. It will be at the Air Force Test Center at Edwards several months.



HIGH ADVENTURE—Kay Quijada, left, sips refresher at peak of Cerro Venado Blanco during recent Adventurers Club hike. Group (center) includes Bob and Georgia Fay, Shirleen Zorrilla, Juanita Alford, Ray Madden, trip leader, Warren Alford, Jerry Alford, Miley Alford, Everett Ames, Jack Fisher and John Anderson. At right, Shirleen Zorrilla enjoys view.

Adventurers Heading For Mexico To Spend Long July 4 Weekend

CRA Adventurers will spend the long July 4 weekend at Bahia de San Quintin, 190 miles south of Tijuana.

Members will rendezvous at noon July 4 at Planta del Valle, 10½ miles south of Colonia Guerrero, and will set up camp about two miles west of the northernmost point on the bay.

Jorge and Shirleen Zorrilla will be trip leaders. Dirt roads to the area are rough but can be negotiated by passenger cars.

The group will visit an old mill, an aging pier, and an ancient English graveyard Saturday morning. Other activities will include surf fishing, skin diving, clam digging, dune buggying, hiking, boating, shell and stone collecting, swimming, and exploring tidepools and hills of volcanic rock.

Lava rocks will be heated Friday evening for a 6 p.m. Saturday luau for which the club will provide meat.

Tourist cards will be required and can be obtained in advance without charge at the Mexican Consulate in San Diego.

Phone the Zorrillas, 454-1374, for additional information.

Remote Sensor Contract Let

(Continued from Page 1)

global pollution was that which used instruments detecting pollutants in the infrared region of the spectrum rather than the visible and ultraviolet regions.

The advantages of the infrared spectrum are that night and day observations are possible, all pollutants have infrared absorption/emission bands and scattered sunlight is not a problem, as it is in the ultraviolet and visible regions.

As a result of the information obtained under the old contract, the new Convair task is to develop preliminary designs for an optical correlation system for remote detection of air pollutants in the infrared spectral region; identify laboratory, field and airborne tests necessary to verify the predicted performances of the system; construct a prototype system; perform the necessary laboratory, field and airborne tests; initiate final design of the system, and continue the study of the techniques for future application to pollutant detection.

The eventual platform for the remote sensing devices will be satellites. To date, detection and monitoring of pollutants has been done on a local basis. No large scale observations over urban areas are carried out and the influence of the weather, diurnal and seasonal cycles on large-scale patterns of pollution is not well known.

It is hoped that the remote sensors can answer some of the questions about the large scale effects of pollution.

The study will be conducted under the direction of Dr. C. B. Ludwig, of space sciences, Dept. 596-0.

Petcher Named ASQC Chairman

Sam Petcher of Convair Dept. 140-2 has been elected chairman of the San Diego section of the American Society for Quality Control for the 1969-1970 club year. C. L. Amaral of Dept. 140-2 was elected secretary.

Others on the incoming executive board are:

George J. Williams, Dept. 141-2; R. H. Sparks, DatagraphiX; C. L. Marks, Dept. 144-2; W. T. Hollar, Dept. 141-2; Eric G. Callard, Dept. 140-2; Joe M. Bowers, Dept. 140-2; R. H. Nicholson, Electronics-SD; and Paul Gelles, Dept. 144-2.

Peyton a Fellow Of Mgt. Society

Convair's G. L. Peyton, manager-engineering administration at Lindbergh Field, was named a Fellow of the International Society for Advancement of Management at an annual conference in San Francisco May 26-27.

Fox, Josephs Selected For Exec. Courses

Two Convair division men have been selected to attend special university executive management programs.

Lyman C. Josephs, director of advanced systems, has been accepted for Harvard University Graduate School of Business Administration's 13-week Advanced Management Program beginning Sept. 14.

William W. Fox, interceptor program director, is attending the eight-week Stanford Executive Program which began Monday (June 23) at Stanford University.

Before joining Convair in 1967, Josephs had served as director of aircraft development and modification for Martin-Marietta, a program director and director of engineering for LTV Aeronautics, and assistant chief engineer and chief project engineer for Chance Vought.

After joining Convair in 1943 as a junior test engineer, Fox served as assistant chief of experimental flight test, project engineer and program manager for F-102 and F-106 aircraft, assistant chief engineer, and chief engineer. He became director of product design when the Convair and Astronautics divisions merged in 1965 and has been interceptor program director since February, 1968.

Son Gets Silver Star For Viet Nam Heroism

L/Cpl. Dale S. Myers Jr., son of Mrs. Alice Myers of Convair's Dept. 191-0, has received the Silver Star for heroism in Viet Nam.

Cpl. Myers was awarded the medal for picking up a live mortar round which had landed in the middle of his squad during an enemy attack. Just before the round landed the entire squad, including Myers, had been wounded by another mortar round.

It was the second time Myers had been wounded in action. His father is a retired Marine master sergeant. His mother has been employed at Convair for 17 years.

Mohrlock Takes Technology Post

Hugo F. Mohrlock has been appointed technology utilization specialist for Convair division, reporting to Neil F. Martin, division patent counsel.



Hugo Mohrlock

Mohrlock, a design specialist and a Convair employe for 19 years, will administer licensing and trade secret agreements which license division-developed technologies to other companies.

In most instances, patents are obtained by Convair's patent department on such technology from invention disclosures by employes, with a substantial percentage of royalties received being shared with the employe.

"It is essential that technologies emerging from our research and development efforts be protected by patents and fully utilized by Convair and other divisions of General Dynamics," Mohrlock said.

"When the technology falls outside our product lines, it can be licensed to other companies for development.

"In order to properly protect our technologies," he said, "it is important that all developments be treated as proprietary inventions until they are cleared with the patent department."

A booklet describing patent and licensing procedure is available from the patent department on request.

Mohrlock attended Syracuse University, California Aeronautical Technical Institute, and Purdue University. He joined Convair in 1950 as a senior design engineer and later was an assistant project engineer for F-102, F-106, Convair 990, and Centaur programs.

Convair Assisting Aircraft Assembly Course for Youth

Convair division is assisting Grossmont Union High School District in training 35 young high school graduates to become aircraft assemblers.

The six-week adult education course is being given two nights a week and Saturday mornings through July 19 at Santana High School in Santee.

Jack Croft, chief of educational services, said Convair is providing technical guidance and has loaned the district some equipment.

Most of the young men enrolled in the 60-hour program were graduated from high school this month. All have had high school industrial arts metal and machine shop training.

The course is being funded by the school district and conducted as a joint venture between the district and Convair because of the shortage of aircraft assemblers in the San Diego area.

Harry Miller, a Convair education specialist, is providing liaison between the division and the school district and other educational services personnel are assisting.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Traditionally, when the Convair Management Club held its annual baseball night it was in the ball park. I hear the picnic will be at CRA Park this year. Won't the Padres let us use the stadium?

A—Yes, but the choice was up to the club. The picnic this year was planned for CRA Park in the hopes that this would encourage more family attendance, in view of the rides, dance band, etc. All employes are invited and encouraged to bring their friends. (Story on page 5.)

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Q—I understand an extra holiday is planned for next year. When will it fall?

A—Ten holidays will be observed in 1970. They are: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after, Christmas Day, two year-end holidays. The added holiday will be Washington's birthday.

★ ★ ★

Q—Some of us missed the Apollo 9 movie due to vacation or travel. Will it be shown again?

A—Possibly. However, arrangements are being made to obtain from NASA the Apollo 10 film for showing to all employes. Watch for Weekly Log and bulletin board announcements.

★ ★ ★

Q—Would Convair be interested in sponsoring a smoking clinic, possibly in association with the American Cancer Society?

A—Not at this time. Convair believes that smoking clinics, Alcoholics Anonymous, etc., are more effective elsewhere than on the plant premises.

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Q—When salvage items are put up for bids, why not let employes have the first chance before outside purchasers are permitted to enter bids?

A—As a general rule, Salvage Yard items are offered to employes first and outside purchasers are called in to bid on the remaining items. However, when outside purchasers are permitted to bid at the same time as employes, the employe still has an opportunity to acquire at a reasonable price, since the salvage dealer is bidding to buy, mark up and resell.

Forty Find Summer Employment In GD Plants During 'Job Fair'

Forty young persons, all under 20, are going to work for General Dynamics in San Diego, 37 at Convair and three at DatagraphiX, hired as a part of a citywide effort to provide summer jobs for boys and girls.

In all, jobs were found for nearly 3,000 during a "Job Fair" held at the San Diego Convention Hall during which business and government representatives interviewed the youths, who had been screened and recommended by their local high schools. Interviewing for Convair were Ray Mendoza, employment supervisor, and Norvell Freeman, employment representative. DatagraphiX was represented by Jack Swank, manager of hourly employment. They all said the applicants appeared to be exceedingly well groomed and sincere.

Of the total finding jobs, the private business sector hired 1,887 (of which Convair was the largest single group) with government agencies providing the balance.

The summer employment program is sponsored jointly by the National Alliance of Business and Urban Coalition in cooperation with the mayor's office, Junior Chamber of Commerce and San Diego Chargers.

The 1960 summer job group makes the second complement of youths to be hired by Convair in as many years. Last year 15 youngsters were hired through the local Youth Opportunity Center. DatagraphiX has participated in similar programs.

AF Award Shown In Plant Exhibit

A special Convair exhibit, highlighting the division's receipt of the U.S. Air Force Craftsmanship Award and showing division craftsmen at work, is being shown at different plant and offsite locations.

The exhibit is on display this week and next in Bldg. 2 at Lindbergh Field, following two weeks in Bldg. 5.

W. E. Magnuson, Craftsmanship program chairman, said the exhibit later will be shown at Air Force Plant 19, the Kearny Mesa plant, Vandenberg AFB, and the Eastern Test Range.

The Air Force Craftsmanship Award banner and citation are incorporated in the exhibit and a color film is shown on the award presentation early this year by Lt. Gen. J. W. O'Neill, Air Force Space and Missile Systems Organization commander.

The Craftsmanship Award is the highest recognition given to civilian contractor firms by the Air Force Systems Command and was awarded to Convair in recognition of sustained superior performance.

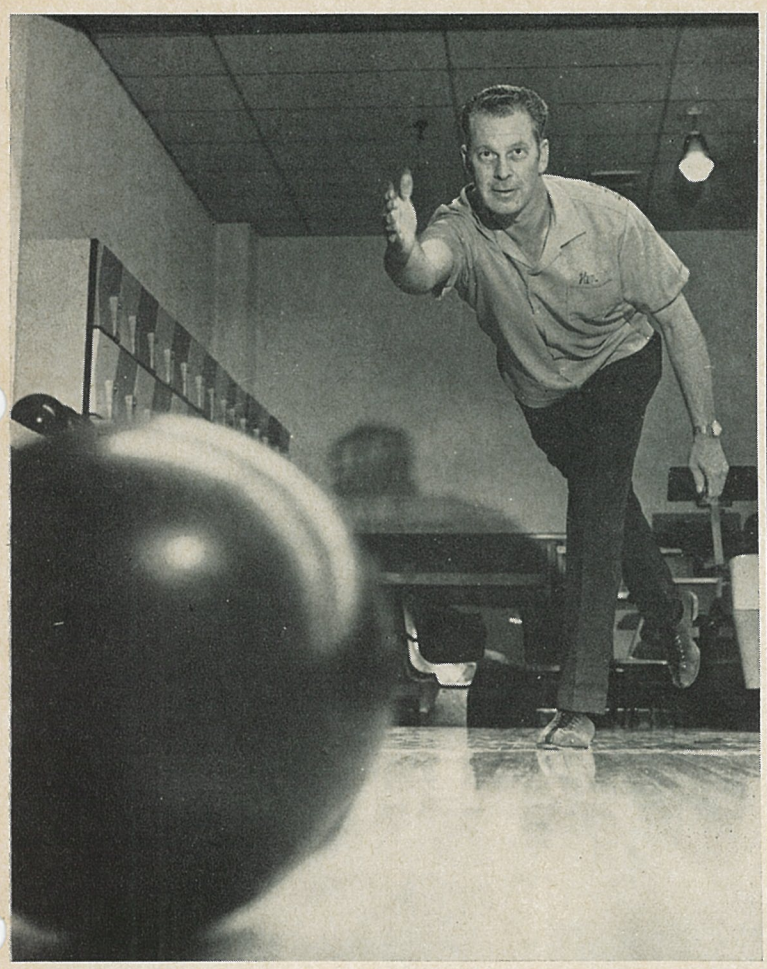
First showing of the special exhibit was May 5-7 at the annual meeting of the American Society for Quality Control in Los Angeles.

Ralph Weide Wins San Francisco Trip

Ralph Weide was the big winner at Convair Management Club's June 7 golf tournament at Whispering Palms course in Rancho Santa Fe. He came away with a pair of round trip tickets to San Francisco via PSA Airlines in the "closest to the pin" drawing.

Other winners were: closest to pin—Bill Minando, John Gordon and Murray Edelstein (dinners for two); low gross—Gary Oing, Carl Willems, Jerry Swarts and Russ Davis; low net—Al Bussard, Vance Walsh, Frank Jenkins and Art Braidic.

Heading the ladies bracket were: Mabel Humphries, Flo Kincaid, Freda Margargal and Carol Weide. They each won $5 gift certificate.



PERFECTION—Ken Beckner of Electronics-SD demonstrates form used in bowling perfect 300 game in recent league competition.

One in 168,000

'Just a Little Nervous,' Beckner Rolls 12 Strikes For 300 Game

Every bowler's "dream" became a reality June 4 for Ken Beckner, a metal bench mechanic in Electronics-SD's Dept. 422, when he rolled a perfect 300 game in sanctioned league competition at Aztec Bowl.

For his 12 straight strikes in the 535-Scratch Trio League game, he will receive a $100 Savings Bond from Aztec Bowl and a gold ring with the "300" score inlaid in diamonds from the American Bowling Congress.

The perfect game was the fifth rolled at Aztec Bowl during its 10 years of operation. San Diego Bowling Association representatives said there is an average of one 300 game bowled in 168,000.

Beckner said he was a "little nervous" during the last three frames — since 50 or 60 onlookers had gathered to watch the game progress.

He has been bowling competitively 12 years, formerly served as president of a CRA mixed scratch league, and has a current 189 average.

Beckner also bowls with his wife, Vivian, an electronics assembler in Electronics-SD's Dept. 423, in the Wednesday night Summer Showcase League. Mrs. Beckner missed her husband's moment of glory — arriving at the Bowl about five minutes after he had completed the perfect game.

Beckner has been an Electronics-SD employe since February and formerly worked 10 years as a precision development mechanic in Convair's Dept. 780-2.

Picnic and Ball Game Scheduled July 12

The Convair Management Club's annual picnic and ball game is scheduled for Saturday, July 12.

The picnic will be at the CRA Missile Park from 3 p.m. to 7:30 p.m. followed by attendance at the Padres-Atlanta Braves game at 8 p.m.

Tickets for the picnic and the game are $3.50 for adults and $2.50 for children. This includes regular $3.50 seats.

The picnic will include raffles, prizes, and a dance band between 3:30 and 5:30 p.m.

There will be a free raffle for children under 12 with baseballs, bats, Padre shirts and similar items as prizes. Prizes for the adult raffle will include a vacation for two in Las Vegas, a complete set of golf clubs.

Ticket sales close at noon, July 10.

Convair Art Show Planned by CRA

An all-Convair art show is being planned by CRA to give amateur painters and sculptors an opportunity to display their work.

George Schmiedel, supervisor of recreation, said tentative plans are for a show in the CRA Clubhouse with all mediums to be exhibited—whatever the material.

Those interested may phone Karen Rose, ext. 1111 KM, or Al Riedler, ext. 1777 KM, for information.

Ride to Lake Hodges Planned by Cyclists

CRA Bicycle Club will take a 50-mile Lake Hodges tour at 7:30 a.m. Saturday (June 28).

Riders will meet on the east side of the bridge at Rte. 395 and Miramar Road. Ride leader is Russ Kennedy, ext. 2220 KM or 273-0468.

A 12½-mile ride around Mission Bay will begin at 2 p.m. Sunday, July 6, from the Hilton Inn. Ride leader will be Dick Gilbert, ext. 1267 LF.

Employes' Night Set For 'Greatest Show'

CRA has announced a "General Dynamics Night at the Circus" July 16 at the San Diego Sports Arena for Ringling Brothers-Barnum and Bailey's "Greatest Show on Earth." This is the circus' 99th season.

Tickets for the 8 p.m. show are currently on sale at all employe benefits outlets at Convair, Electronics-SD and DatagraphiX. Two-hundred $4 and 200 $2 tickets are available (a $1 savings on each.) Deadline for ticket pickup is July 11.

4,000 EMPLOYES, GUESTS VISIT AQUATIC PARK

More than 4,000 Convair employes, family members and guests attended the General Dynamics "Sea World Days" June 7-8. George Schmiedel, supervisor of recreation, said all seemed to have an enjoyable day.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is June 30. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — July 4 weekend, Bahia de San Quintin. Meet at noon, Planta del Valle.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — Lake Hodges 50-mile ride, June 28. Meet at Rte. 395 and Miramar Road at 7:30 a.m.

BONAIR FLYERS — Meeting July 3, 7:30 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS — Meet Tuesdays and Thursdays, 7-10 p.m.

CHORUS — Rehearsals 7:30-9 p.m., Wednesdays.

COUNTRY WESTERN MUSIC — Organizational meeting, June 26, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS — Meeting July 9, 7:30 p.m.

DRAMA — Organizational meeting, July 1, 7:30 p.m.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Meeting July 2, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF — Coronado tournament, July 5-6.

HEALTH CLUB — Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 to 11 a.m.

HI-FI MUSIC — Meeting July 8, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:45-7:45 p.m., House of Ice, Highway 80 and Lake Murray Blvd. Flat-rate $1, includes skates. Free skate session July 10 ($.50 skate rental fee).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

PISTOL CLUB — Shoot July 13, 9:15 a.m., SD Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB — Meeting July 3, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB — Meeting July 9, 7:30 p.m.

RIFLE CLUB — Senior shoot July 9, 7 p.m.; Junior shoots July 5, 9 a.m.; Gillespie Field Range.

ROCKHOUNDS — Meeting July 9, 7:30 p.m.

SAILING—Meeting tonight (June 25), 7:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB — Meeting July 1, 8 p.m., South Bay Club.

SPORTS CAR CLUB — Meeting July 9, 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE — Dance Thursdays, 8-10 p.m.

STAMP CLUB — Meeting June 26, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays 10 a.m. to 4 p.m.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m.

TOURS — Mexico preview slides July 8, 8 p.m., executive dining room, LF. Tour starts Aug. 9.

TRAILERS — Meeting July 1, 7:30 p.m.

TROPICAL FISH—Meeting and workshop Mondays, 7:30 p.m.

WOMEN'S GOLF — Whispering Palm Golf tournament July 12, 8 a.m.

Fiesta, Track, Expo Tickets Available

Tickets are available at all CRA and employe benefits outlets for the following upcoming events:

Discount books for Fiesta 200 events in Old Town are on sale at $2.25 (a 75-cent saving). Tickets cover Los Voladores, Fiesta Ballet Folklorico, marionettes and magic shows.

Tickets for the second annual U.S. Masters' Track and Field Championships at 4 p.m. July 3-5 in Balboa Stadium are $1 for adults and 75 cents for children. There will be a fireworks show at 8 p.m. July 3.

The Southern California Exposition is scheduled June 25-July 6 at the Del Mar fairgrounds. Tickets are $1.25 for adults and 50 cents for children under 12.

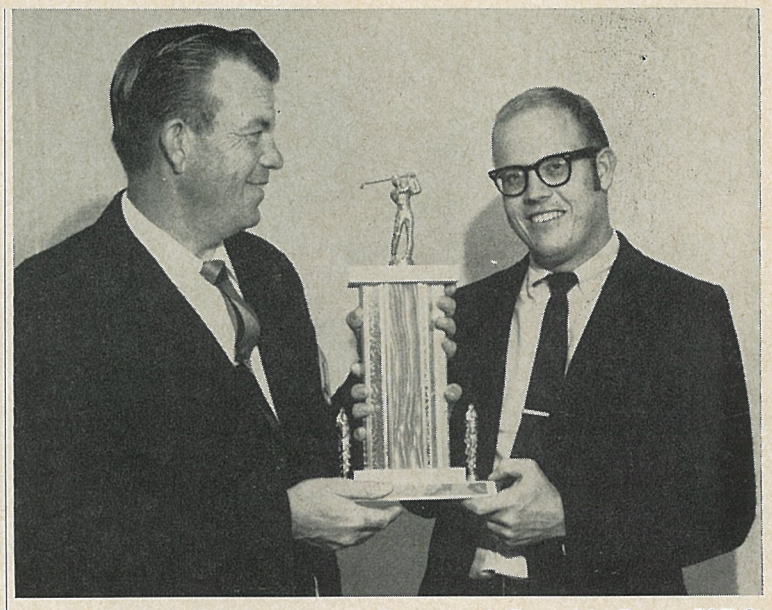
Bids Being Accepted For Three Vehicles

Convair salvage yards are accepting sealed bids for sale of a 1966 Ford Galaxie 500 four-door sedan, a 1966 Ford Country Sedan station wagon, and a 1961 Ford pickup truck.

The vehicles can be seen at the Lindbergh Field salvage yard and bid forms are available at each salvage office. Bids will be opened July 1.

FREE ICE SKATING SESSION SLATED

CRA Ice Skating Club will sponsor a free skating session July 10 at the House of Ice, Interstate 8 and 70th Street.



"SINGLE" HONOR—Wayne Sanger of Convair's Dept. 507-0, right, receives special trophy from Del Dimmitt, CRA golf commissioner, after hole-in-one in May 24 tournament.

'Closest to Pin' on Bernardo No. 13 Turns Out to be a 'Hole-in-One'

Thirteen proved a lucky number for Wayne Sanger in last month's CRA golf tournament at Rancho Bernardo.

Sanger, a Dept. 507-0 aerodynamics engineer at Convair's high speed wind tunnel, aced the 13th hole with a 143-yard 9-iron shot.

Although it wasn't his first hole-in-one (he scored one 10 years ago), the excitement was such that he dropped 10 strokes to par during the last five holes, most of them penalties.

Sanger won "closest to the pin" on No. 13 hands down. Others who collected golf balls for "closest" were E. Adkinson, C. Gordon and John Doggett.

Flight winners were:

1st flight—Art King, low gross, 76; Fred Aguero Jr., low net, 66.

2nd flight—Bill Whitley, low gross, 82; John Jackman, low net, 68.

3rd flight—Ed Rincon and John Doggett, tie for low gross, 85; Lynn Therrien, low net, 68.

4th flight—John DeGrazier, low gross, 82; Ed Wargo, low net, 66.

5th flight—John Oostyen, low gross, 88; Fred Kuenzel, low net, 63.

6th flight—Dave Linn, low gross, 95; Bob Sheffler, low net, 63.

7th flight—Jim Rose, low gross, 96; J. Lockwood, low net, 65.

8th flight—Nord Hjorleid, low gross, 96; Gene Brule, low net, 66.

9th flight—J. Giamanco, low net, 70.

Five Ball Clubs Go Undefeated

After four weeks of CRA softball league play, the Pre-Designs, Super Gnates, GD/E Bombers, Supersonics, and Plant 19 All Stars all had perfect records—all wins and no losses.

On the other hand, the Spoilers, Bullet Biters, Budgets, and Program Control all had all-loss records.

Standings are:

FAST PITCH

	W	L
Pre-Design	3	0
DatagraphiX	2	1
Cosmo Bums	2	2
Bugaloos	2	2
Mod Squad	2	2
Charlie Brown's All-Stars	1	2
Spoilers	0	3

TUES. SLOW PITCH

Super Gnates	4	0
Material	3	1
DatagraphiX	3	1
Hawks	1	3
Adiabats	1	3
Bullet Biters	0	4

WED. SLOW PITCH

GD/E Bombers	4	0
DatagraphiX Reds	2	2
Hitless Wonders	2	2
Fire Bees	2	2
Disk Packers	2	2
Budgets	0	4

THURS. SLOW PITCH

Supersonics	4	0
Plant 19 All-Stars	4	0
Test Lab	2	2
Intruders	1	3
Key Stoppers	1	3
Program Control	0	4

Camera Club Names 15 Contest Winners

Convair Camera Club has selected 15 winners in its second-quarter photo contest.

Both color slides and black and white prints were judged and each member could submit up to four entries.

Winners and categories are:

Color (advanced)—Jim Mildice, Ken Rinker, Erich Wolf, and Mary Ann Wolf.

Color (beginner)—Paul Distabile, Bob Jenkin (two slides), Alfred Naye, and Leo Springer.

Black and White (advanced)—Bob Jenkins, Bill Paine (two prints), and Erich Wolf.

Black and White (beginner)—Garry Clark, Art Mason, Naye, and Bob Pettyjohn.

Next contest deadline and judging is August 17.

Mexico Tour Meeting Set

Slides of CRA's annual Mexico summer tour will be shown in the LF plant executive dining room at 8 p.m. Tuesday, July 8.

James Hardison of Dept. 113-0 will conduct the 30-minute showing.

Scheduled departure for this year's tour is Aug. 9. Cities to be visited include Guadalajara, Mexico City, Xochimlco, Teotihuacan, Cuernavaca, Taxco, and Acapulco.

Cost is $405 per person for two weeks and includes first class rail transportation, lodging, side trips, entrance fees, and most meals.

Reservations and information may be obtained by calling 1111 KM, or by contacting Hardison at his home, 276-5805.

Country-Western Music Unit Formed

The "Nashville sound," currently sweeping the pop-music charts, is coming to Convair in the form of a CRA Country-Western Music Club.

The fledgling club will meet each Thursday at 7:30 p.m. in CRA Missile Park picnic shelter beginning June 26.

All Convair employes and families interested in singing or listening to country-western songs are invited to attend.

Club organizer Ruby Graves LF ext. 1304 says he hopes to form a musical group to entertain locally at hospitals and clubs.

New Dramatic Club To Organize July 1

The Convair Drama Club will meet at 7:30 p.m. Tuesday, July 1, in room B at CRA Clubhouse.

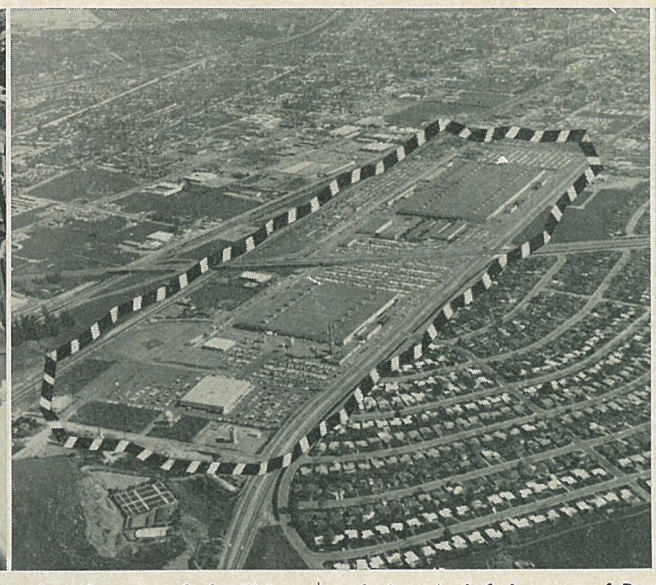
The second meeting of the newly formed group will be to organize and discuss future activities with Tyler Winn, Dept. 954-3, who will direct club productions.

Miss Winn has spent a number of years in professional theater.

RIDERS DISCUSS CUYAMACA TRIP

Plans for a Cuyamaca mountain trip and trail ride will be discussed by the CRA Riding Club at their meeting at 7:30 p.m. tonight (June 25) at CRA Clubhouse. Reservations must be in by the next meeting, 7:30 p.m., July 9.







POMONA SCENES—Pomona division is among most handsome of facilities operated by General Dynamics. Aerial in center shows complex located on outskirts of city. At left is part of Redeye production, world's smallest guided missile system. Division was formally activated in 1953.

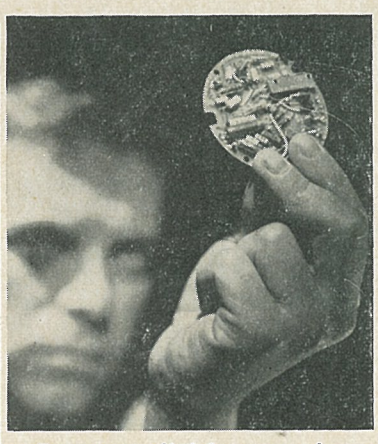
Pomona Division Dates Back to 1949 Request For Terrier Development

Pomona (Calif.) division can trace its beginning back a score of years to a request by the Department of Defense for a two-fold program—development and production of the Terrier ship-to-air missile, and establishment of a Naval Industrial Reserve Ordnance Plant capable of such missile production.

In response to this 1949 request, a completely integrated guided missile plant was activated at Pomona in 1953. For the first time research, development, testing and manufacturing of tactical guided missiles could be accomplished in the same facility.

General Dynamics operates the Naval Industrial Reserve Ordnance Systems Command. This 1,300,000-square-foot facility is located on the Navy's 140-acre tract at the western edge of Pomona. An additional 100,000 square feet of engineering office and laboratory space, built by General Dynamics on company-owned property, is located adjacent to the NIROP area.

Pomona division began operation in 1951 and by December of that year employment had reached 1,510 with 1,114 of the employes still located in San Diego and only 396 at Pomona. By the end of 1953, employment had increased to 3,131 with all employes located in the new facility at Pomona. Steady growth increased employment to some 7,800 by end of 1968.



Pomona division produces some 34,000 modules a month in 350 different styles.

The division's annual payroll in Pomona has increased from nearly $17,500,000 in 1953 to more than $76,500,000 last year.

Following the original Terrier missile have come Advanced Terrier, Tartar, Standard Missile, Standard ARM, and Redeye — all produced at Pomona and all among the nation's top tactical defense weapons.

Terrier first became operational in late 1955 and Tartar followed in 1960. Deliveries of both Terrier and the more compact Tartar were completed in 1968 and are being succeeded by extended and medium range versions of the Standard Missile. Pomona-built guided missiles now arm 77 U.S. Navy ships and 14 ships of allied navies.

Current prime contracts include Standard Missile, which implements the U.S. Navy's concept of a standardized shipboard missile system for defense against surface and aerial threats; Redeye, a shoulder-fired anti-aircraft missile for Army and Marine Corps; and Standard ARM, an anti-radiation missile used with Navy and Air Force aircraft for air-to-ground defense against radar systems.

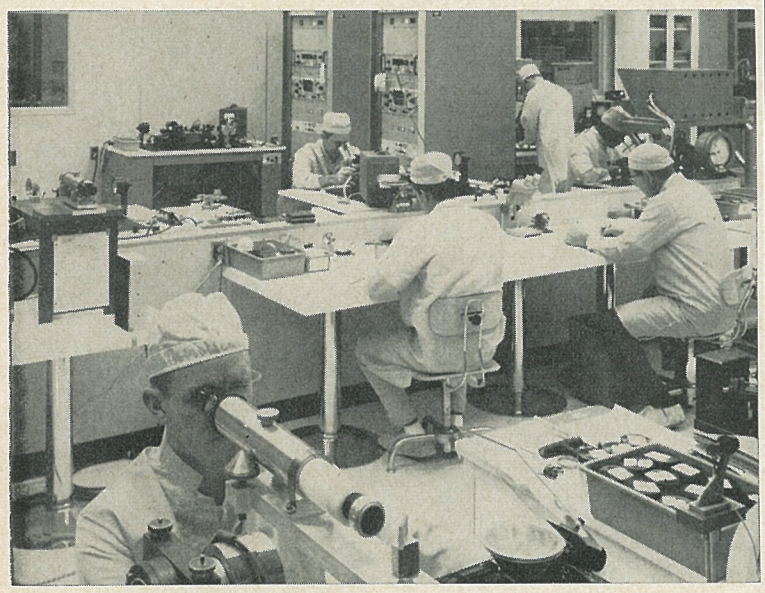
Pomona heads the General Dynamics industrial team which recently submitted proposals for the engineering development phase of ASMS (Advanced Surface Missile System). This next-generation weapon will be the Navy's major defense missile system of the 1970s.

In development or production are such highly complex electronic circuit systems as electronic receivers for long-range reconnaisance aircraft, acoustic mortar detectors, and guided gun shells.

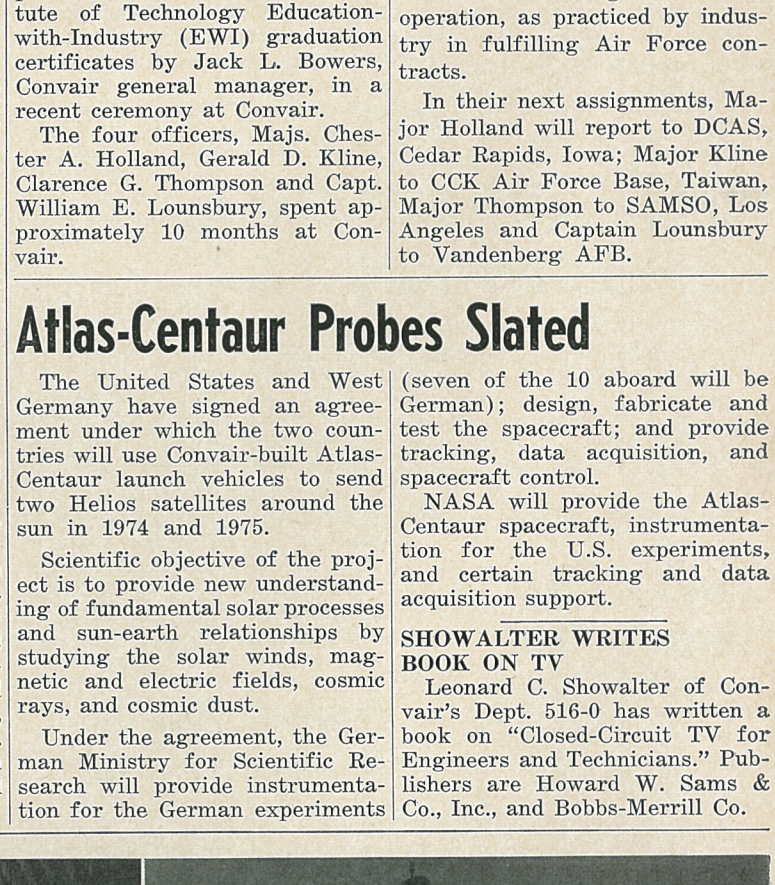
Missile and tactical weapon development experience at Pomona has opened doors to many electronic areas. Unique concepts have been developed in fields of intricate and highly reliable electronic packages, advanced solid-state devices and packaging techniques to minimize space and weight requirements while improving performance and reliability, highly specialized automated test equipment, and advanced infrared systems.

Engineering facilities, housed in two completely air-conditioned buildings, cover 492,000 square feet of floor space. These facilities include modern offices, a technical library; analog and digital computers; design laboratories; physics, chemistry and metallurgy laboratories; the finest environmental test facilities, and an experimental factory.

Manufacturing facilities are housed in a 744,000 square foot completely air conditioned building. Entirely self contained, this building houses all manufacturing facilities from shipping and receiving to detailed fabrication, assembly, test and packaging. Capabilities are present for both standard and highly specialized operations.



Assembly of precision devices is conducted in this clean room.



LEAVING CONVAIR—Shown with Jack L. Bowers, Convair general manager, center, are four Air Force officers who have spent ten months with Convair in Education with Industry program. From left: Major G. D. Kline, Major C. G. Thompson, Bowers, Major C. A. Holland and Captain W. E. Lounsbury.

Air Force Officers Complete Ten-Month Convair Duty Tour

Four Air Force officers were presented with Air Force Institute of Technology Education-with-Industry (EWI) graduation certificates by Jack L. Bowers, Convair general manager, in a recent ceremony at Convair.

The four officers, Majs. Chester A. Holland, Gerald D. Kline, Clarence G. Thompson and Capt. William E. Lounsbury, spent approximately 10 months at Convair.

This course is designed to stress industrial organization and operation, as practiced by industry in fulfilling Air Force contracts.

In their next assignments, Major Holland will report to DCAS, Cedar Rapids, Iowa; Major Kline to CCK Air Force Base, Taiwan, Major Thompson to SAMSO, Los Angeles and Captain Lounsbury to Vandenberg AFB.

Atlas-Centaur Probes Slated

The United States and West Germany have signed an agreement under which the two countries will use Convair-built Atlas-Centaur launch vehicles to send two Helios satellites around the sun in 1974 and 1975.

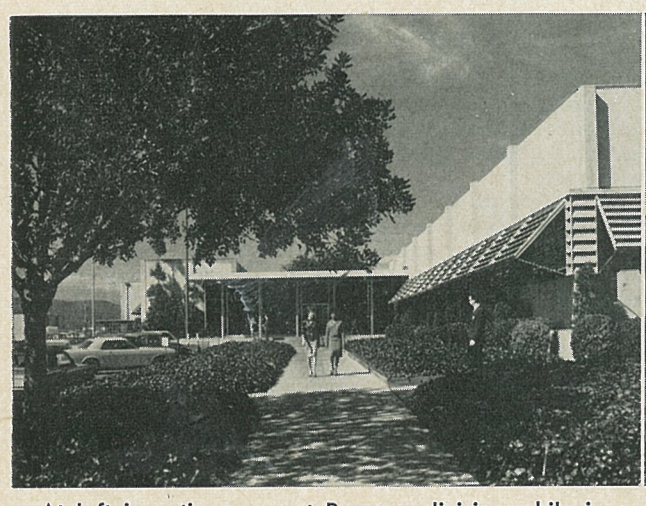
Scientific objective of the project is to provide new understanding of fundamental solar processes and sun-earth relationships by studying the solar winds, magnetic and electric fields, cosmic rays, and cosmic dust.

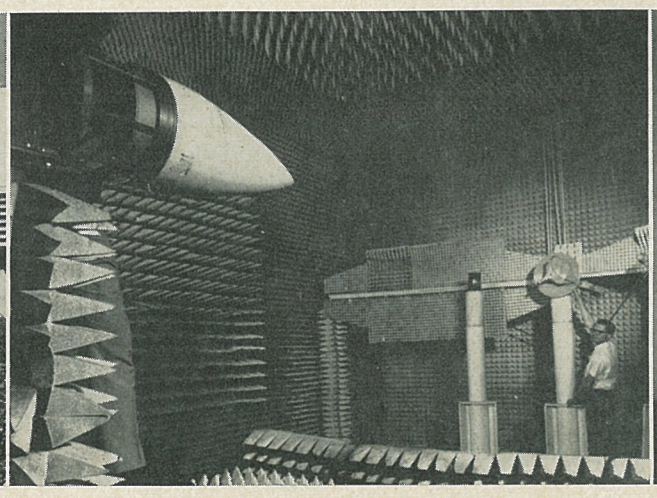
Under the agreement, the German Ministry for Scientific Research will provide instrumentation for the German experiments (seven of the 10 aboard will be German); design, fabricate and test the spacecraft; and provide tracking, data acquisition, and spacecraft control.

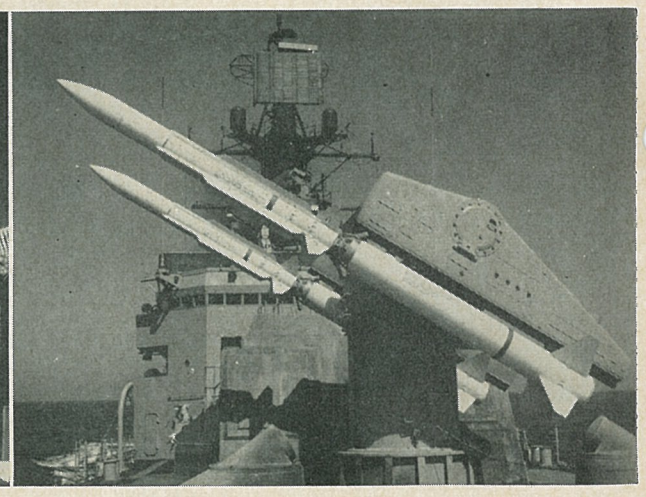
NASA will provide the Atlas-Centaur spacecraft, instrumentation for the U.S. experiments, and certain tracking and data acquisition support.

SHOWALTER WRITES BOOK ON TV

Leonard C. Showalter of Convair's Dept. 516-0 has written a book on "Closed-Circuit TV for Engineers and Technicians." Publishers are Howard W. Sams & Co., Inc., and Bobbs-Merrill Co.





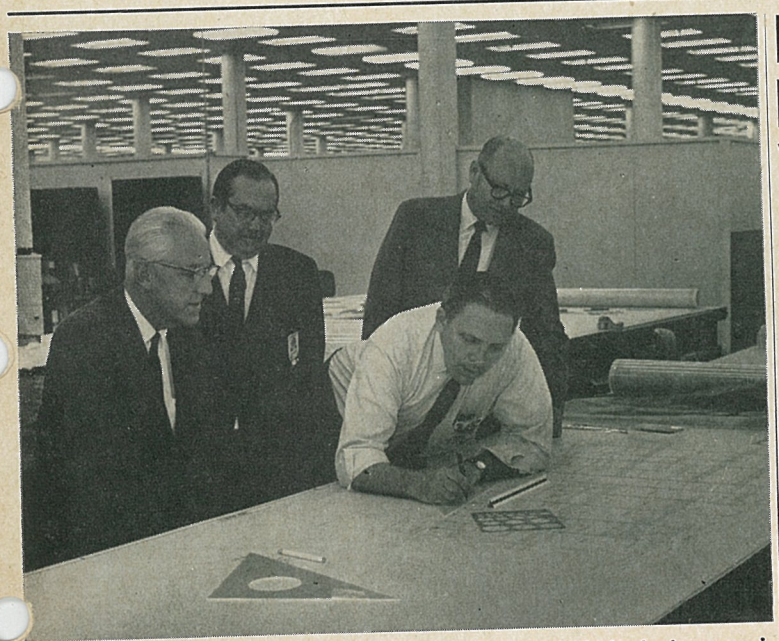


At left is patio scene at Pomona division while in center is RF dark room used in design, development and evaluation of missile guidance systems. At right are Pomona-built extended range Standard Missiles shown on launcher aboard USS Fox. Pomona-built missiles arm 77 U.S. Navy warships.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 14 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, July 9, 1969



DC-10 MILESTONE—Elwood Ruttan, Dept. 511-6 design engineer, completes final engineering drawing for DC-10-10 fuselage. Looking on, from left, are Bill Service, group engineer; Virgil Park, project engineer, and M. H. Caldwell, McDonnell Douglas engineering representative.

Vast Engineering Task Complete For DC-10 Tri-Jetliner Fuselage

Convair engineers late last month reached a significant milestone in the DC-10 program when the last of more than 1,800 drawings for the DC-10-10 tri-jetliner fuselage came off the drawing board at Lindbergh Field.

Max Yale, Convair DC-10 engineering manager, said only drawings for the entrance door mechanism, which is being redesigned, remain for completion of initial Convair engineering tasks for the DC-10-10.

Additional design changes for the DC-10-10 will be incorporated through engineering change notices. Engineering modifications will be instituted for other DC-10 models, which include the Series 20, Series 30, and Series F freighter aircraft.

Virgil J. Park, DC-10 project engineer, said Convair personnel have produced all engineering production drawings for fuselage sections C, D, F and G for the DC-10-10.

Production design of Section E, which incorporates wing mating fixtures, was handled by McDonnell Douglas.

Yale expressed appreciation to the Convair DC-10 engineering team for a "job" well done" on the initial Series 10 aircraft drawings.

He said James Wharton, the design group supervisors under his direction, and the technical group supervisors had done a "particularly outstanding job."

Engineering support for the

(Continued on Page 4)



OVER THE GOAL—F. D. Applegate, director of product design, left, receives Convair research and engineering department's cost reduction trophy for second quarter from E. R. Peterson, vice president-research and engineering. Second quarter efforts enabled department to surpass initial cost reduction goal for year.

Engineers Pass Savings Goal; Peterson Sets New Objective

Outstanding second quarter cost reduction efforts by product design functions enabled Convair division's research and engineering department to exceed its total 1969 cost reduction goal of $600,000 before mid-year.

E. R. Peterson, vice president-research and engineering, has commended those who helped achieve the goal and has increased the department's cost reduction objective for the year to $960,000.

Peterson also recently presented the research and engineering department's quarterly cost reduction trophy to F. D. Applegate, director of product design, for most outstanding second quarter performance.

The trophy will be displayed in the electronics systems area, headed by Orison Wade, and the

(Continued on Page 2)

FB-111A Work Earns Air Force 'A-Plus' Grade

Convair division received its share of an "A-plus" grade from the Air Force this month in recognition of successful completion of "First Article Configuration Inspection" (FACI) of FB-111-A No. 3, bomber version of the F-111, designed for Strategic Air Command use.

"I am extremely pleased with the professionalism exhibited by all Air Force agencies and by General Dynamics," Brig Gen. J. S. Chandler, director of the 111 Systems Program Office, commented. "This unusually good FACI is a reportcard of A-plus for everyone."

General Chandler said the FACI, conducted primarily at Fort Worth, was not only a successful verification of hardware with paper, but more importantly was "a great testimony to the accomplishments of all Air Force agencies, to all General Dynamics functional activities, and to each individual of GD."

Convair currently has 3,200 employes assigned to F-111 work.

About 2,000 are employed on aircraft parts production at Air Force Plant 19 and Lindbergh Field plant. The other 1,200 work on aerospace ground equipment at Kearny Mesa.

Convair and Defense Contract Administration Services (DCAS) representatives had conducted incremental FACIs in San Diego on FB-111A No. 3's aft center fuselage sides structures, forward electronics bay structures, pivot fuel pylons and adapters, fixed fuel pylons, and external fuel tanks.

W. S. Stroud, Convair F-111 program manager for airborne elements, said this required checking of thousands of engineering drawings and pages of planning paper to insure they concurred identically with hardware being delivered for FB-111A No. 3 and to establish a verified configuration baseline for those structures in the bomber version.

The incremental FACI activity at Convair was required to allow inspection and matching of documents with parts prior to the parts installation into subassemblies and integration into the aircraft.

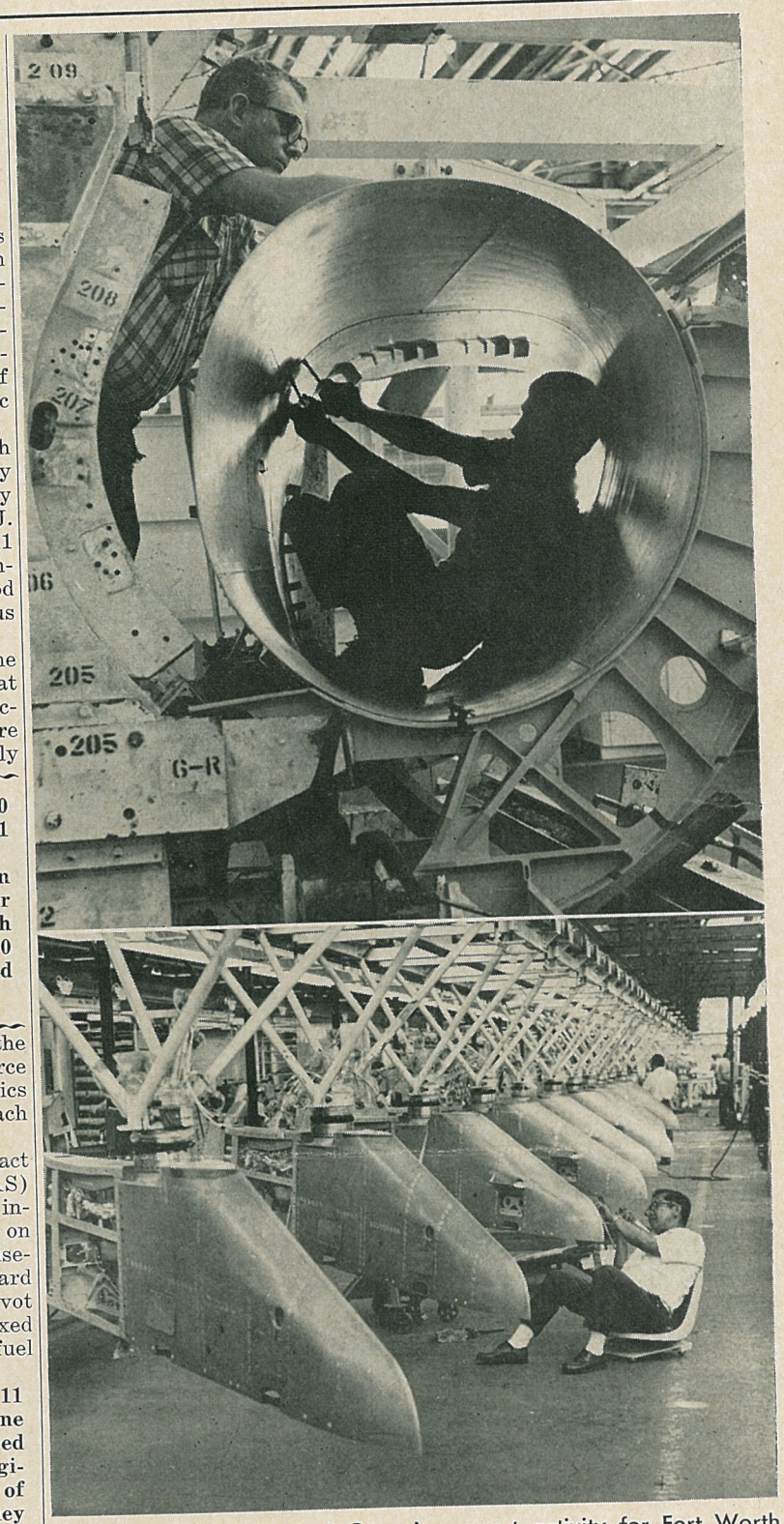
Mike Bickers, a Convair F-111 assistant program manager, said close liaison between DCAS and Convair personnel made it possible to run the incremental FACIs without impacting production schedules.

General Chandler said the decision to conduct the FACI on FB-111A No. 3 rather than wait for SAC's first production model gained valuable time and that system performance projects show FB-111A No. 3 to be representative of the first SAC 111 bomber.

"Even more important," he said, "a valid baseline has been established for aerospace ground equipment (AGE), spares, and other supportability items so that sound Air Force Logistics Command decision can be made on configuration and quantities (in range and depth) of support items."

Bickers said F-111 AGE units being produced by Convair at Kearny Mesa also are undergoing incremental FACI and are being signed off by DCAS before being shipped directly to the using

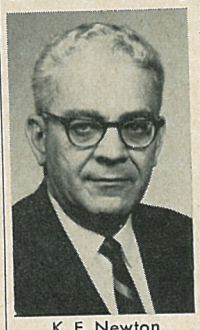
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F-111 ASSIST—Typical Convair support activity for Fort Worth division F-111 program is shown in work at Air Force Plant 19. Shimming engine nacelle inlet duct for aft center fuselage side assembly (top photo) are Robert F. Hatter, left, and Robert Arena, inside duct, both Dept. 027 assemblers. In lower photo, Pablo Alcaraz, Dept. 148-9 assembly inspector, checks pivot armament pylon on production line.

Ken Newton Appointed Director Of Launch Vehicle Programs

Kenneth E. Newton, manager of Convair operations at the Eastern Test Range (ETR) since 1966, was appointed director of launch vehicle programs for the division effective June 23.



K. E. Newton

He reports directly to Jack L. Bowers, Convair general manager.

Newton joined General Dynamics in 1948 at the Daingerfield, Texas test facility where he worked on wind tunnel and jet engine instrumentation.

In 1952, he joined the research staff at the University of Chicago working in the field of atmospheric physics and did graduate work in physics at the Illinois Institute of Technology. In 1955, he joined Convair division on the Atlas project.

He served as a test conductor and chief test conductor at Sycamore Test Site from 1957 to 1960, chief test conductor at the Eastern Test Range from 1960 to

(Continued on Page 2)

Kalitinsky Gets Scientific Post

Andrew Kalitinsky, director of engineering for Convair launch vehicle programs since 1967, has been appointed director of scientific programs for the division.



A. Kalitinsky

He reports directly to Jack L. Bowers, Convair general manager, and will serve as a member of Bowers' division staff.

Bowers said Kalitinsky's new responsibilities include looking into new activities which will be

(Continued on Page 2)

Ken Newton Appointed Convair Director Of Launch Vehicle Programs

(Continued from Page 1)

1962, and base manager at the Western Test Range in 1962 and 1963.

Newton first was Convair ETR operations manager from July, 1963, until April, 1965, before leaving for a position with Aerospace Corp.

As manager of Convair ETR operations since 1966, he has been responsible for all division activity at Cape Kennedy, including checkout and launch of Atlas and Centaur space launch vehicles that sent Lunar Orbiter and Surveyor spacecraft to the moon and launched Gemini target vehicles, Orbiting Astronomical Observatory spacecraft, Applications Technology Satellites, and Mariner Mars and Venus probes.

Newton attended Geneva College in Pennsylvania and received his electrical engineering degree from Southern Methodist University. He served in the U.S. Army as a radar research and development specialist during World War II.

CRA Buys Trailers For Pine Crest Use

CRA has purchased five camping trailers for use by Convair employes and their families at Pine Crest recreation area.

Three of the trailers sleep up to six persons while the other two sleep up to eight.

Log Book Entries

Service Emblems

CONVAIR

Service emblems awarded during the month of July.

Thirty-year: Dept. 400, A. J. Woods.

Twenty-five-year: Dept. 016, Vivian S. Keech; 027, E. M. Stadheim; 031, E. D. Ingold; 059, Sarah E. Smerdon; 113, Nora L. March; 131, E. W. Sutton; 144, Edna P. Miller; 170, I. F. Rollins; 250, Leonard Davis; 420, H. J. Cronk, L. W. Raper; 572, T. T. Tanalski; 759, M. F. Gabriel; 843, Lucy S. McMinn.

Twenty-year: Dept. 016, Hazel H. Eaton; 027, L. Castro; 059, R. L. Hyde; 101, Mary R. Leiker; 131, L. G. Reeb; 144, Dorothy H. Millis; 149, J. F. Dubois; 202, A. G. Hedium; 250, R. F. Graham, C. W. Rigney; 491, E. D. Green; 731, R. J. Faucher; 810, J. A. Deming, R. T. Gaughen; 840, Ruth A. Louden.

Fifteen-year: Dept. 001, Ruth V. Cravo, V. G. Harding; 002, Eunice L. Barger; 027, J. L. Punneo; 031, W. H. Boyd, E. A. Kohr; 059, J. M. Stoffel; 131, L. W. Greathouse; 142, M. Flores, H. J. Winne; 149, B. B. Suggett; 400, E. L. Smith; 500, J. P. Rimer; 512, R. A. Clement; 518, Dorothy L. Baker; 524, Lavern J. Wright; 533, H. S. Miller; 543, J. D. Rhamy; 553, R. J. Fosbinder; 566, C. J. Leoni; 586, J. W. Brummer; 597, R. A. Johnson; 780, M. B. McDowell; 832, E. F. Cooper, Shirley A. Dietrich; 834, V. J. Bordelon; 835, L. R. Matthews.

Ten-year: Dept. 027, M. Marquez, J. G. Roman; 058, C. C. Broadwater; 059, D. G. Carlson; 102, Mary J. Anderson, A. C. Perry; 113, Mary K. West; 141, J. A. Crush; 144, T. K. Cross; 145, L. J. Brown; 149, M. T. Barringer, J. E. Harper, J. C. Mitchell; 170, Mable R. Kent; 193, C. G. Evans; 195, A. B. Eldred; 202, W. T. Clayton, W. E. Ladd; 250, G. L. Bolton, P. P. Lucas, M. Michaels, J. A. Riehl, R. Saucedo; 401, A. L. Sleep; 491, J. N. Coulson; 508, G. J. Blumenthal; 512, R. R. Eckberg; 518, Marian L. Campbell; 524, Dolores Dinant, Lenore Gardner, Ruth E. Lutz, M. J. Parent; 565, R. H. Jenkins; 567, T. R. Liles; 585, R. M. Smith; 595, R. H. Schuett, A. N. Wilson; 598, M. E. Stone; 780, Antoinette Byers, J. E. Kelley, J. Maroney, A. C. Miller; 810, L. J. Devlin; 832, R. Wentz; 834, Betty Fortin; 962, J. T. Heffron, J. W. Schaelchlin; 966, M. B. Adams, R. W. Jennings; 979, C. R. Hodsden, E. C. Luby; 985, Lucille Mahoney, T. Miyamoto, C. E. Vickers, O. J. Washburn.

Personals

CONVAIR

My sons join me in thanking our friends at Convair for the flowers and other expressions of sympathy upon the recent death of our husband and father.

Mrs. Leonard O. Cederwall and sons
Dept. 6

* * *

We wish to express our sincere thanks to so many at Convair for the flowers and other expressions of sympathy on the recent death of Aloah M. Fraser.

A. W. (Hank) Fraser and family
Dept. 059-0

Deaths

CONVAIR

BERG—Rupert C., retired Feb. 14, 1963, Dept. 129, died June 4.

DUNBAR—Irwin E., Dept. 460, died June 25. Survivors include his wife, Thelma, a daughter and a son.

HILL, Wilmer S., Dept. 835-2, died June 17. Survivors include his wife Floriene, mother Betty, daughter Priscilla Palmer, son Douglas and three grandchildren.

HUTCHERSON—Will C., retired Aug. 4, 1961, Dept. 215, died May 16. Survived by wife, Myrtle.

LASSWELL—Harold A., Dept. 195-3, died June 21. Survived by his wife, Blanche.

STAATS—Edmund L., Dept. 835-4, died June 26. Survived by his wife Kathryn.

STIDHAM—William S., retired July 17, 1965, Dept. 576-3, died June 15. Survived by his wife Opal.

WHITICAR—Lewis C., retired July 24, 1957, Dept. 603, died May 25. Survived by his sister Anna Sankey.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending June 20.

Dept. 027, A. R. Anderson, $15; 780, P. A. Ashcraft, $34.60; 015, J. Baptista, $25; 401, A. L. Bishop Jr., $15; 019, D. K. Budge, F. S. Ollison, $9.75 each (joint award); 144, W. L. Burkhalter, $27.60; 001, J. A. Chertkow, $30; 059, J. F. Christeleit, $15; 143, G. D. Clark, 780, D. R. Nemitz, $26.95 each (joint award); 732, T. J. Cordova, $15; 250, K. R. DeArmond, $15; 833, D. DeDonato, $85.60; 027, P. Estrada, $30; 002, H. H. Frein, $76.10; 002, H. H. Frein, 059, J. M. Rivera, $63.55 each (joint award); 059, J. H. Gahagan, $18.30; 027, C. F. Hagata, $19.50.

Dept. 401, D. J. Harms, $25; 001, D. E. Howard, C. E. Scott, G. W. Weide, $14.60 each (two joint awards); 027, T. W. Kerns, $27.80; 250, S. J. Kozielski, $42.60; 027, W. Lane, $55.70; 400, R. D. MacGregor, $15; 420, J. P. Miller Jr., $15; 756, J. J. Monty, 541, A. Sansone, $7.50 each (joint award); 059, G. J. Needles, $15; 027, D. R. Noon, $15; 454, R. S. Peden, $15; 059, J. M. Rivera, $15; 403, R. N. Roth, $15; 045, R. L. Stevens, $15; 250, J. T. Taylor Jr., $15.40; 144, M. Vukelich, $15; 780, P. A. Williams, $15; 015, W. L. Woodward, $15.

Employe Suggestion awards approved for the week ending June 27.

Dept. 144, K. C. Agosto, $48.50; 016, M. V. Archibeque, $15; 526, N. A. Austin, $17.30; 143, H. A. Benner, $30.50; 027, S. D. Engebretson, $50.20; 027, S. D. Engebretson, J. S. Parsons, $17.15 each (joint award); 985, C. M. Flores, $15; 002, H. H. Frein, $235.30; 144, H. M. Gallant, M. J. Sorg, $34.60 each (joint award); 401, S. W. Graves, $66.40; 130, P. J. Hardisty, $666; 979, W. B. Harrison, $15; 027, W. T. Higgins, $15; 780, M. D. Holley, $15; 001, D. E. Howard, C. E. Scott, G. W. Weide, $5 each (joint award); 250, E. B. Jablonski, $38.60.

Dept. 059, L. A. Jones, $15; 507, V. M. Jorgensen, $20.60; 059, P. G. Lane, $15; 733, J. R. Mattson, $15; 250, T. W. Mears, K. D. Taylor, $60.45 each (joint award); 756, J. J. Monty, H. E. Naish, $7.50 each (joint award); 579, B. H. Moore, $17.60; 511, L. M. Moore, $15; 015, R. D. Morales, R. L. Puckett, I. J. Spaulding, $5 each (joint award); 002, G. D. Pfeifer, $30 (two awards); 985, J. Regula, $51; 015, R. Sheffler, $15; 985, R. J. Simon, $15; 979, T. J. Skelley, $15; 027, R. T. White, $17; 027, F. L. Wilson, $66.10; 019, R. R. Young, $22.

Retirements

CONVAIR

ARMS—Kenneth W., Dept. 732-0. Seniority date April 3, 1953, retired June 27.

BERDAL—Albin, Dept. 452-0. Seniority date July 9, 1958, retired June 6.

BORNEMANN—Franz W., Dept. 149-8. Seniority date April 9, 1941, retired June 30.

BYERS—George B., Dept. 810-0. Seniority date July 17, 1956, retired June 30.

COFFINBARGER—Noble B., Dept. 451. Seniority date June 14, 1950, retired June 27.

CONSOLE—Matthew, Dept. 019-0. Seniority date Oct. 8, 1947, retired June 27.

COOPER—Gerald F., Dept. 031. Seniority date Dec. 17, 1940, retired June 30.

FANSLER—Isaiah J., Dept. 543-3. Seniority date April 11, 1951, retired June 30.

FLETCHER—Chester G., Dept. 401-5. Seniority date Nov. 14, 1939, retired June 30.

HANSON—Arvid H., Dept. 833-2. Seniority date Nov. 3, 1952, retired June 27.

JENSEN—Alyce B., Dept. 780-2. Seniority date May 2, 1956, retired June 13.

KENNEDY—John D., Dept. 130-3. Seniority date Dec. 10, 1958, retired June 27.

MAYER—Harold E., Dept. 210-0. Seniority date Aug. 26, 1947, retired June 30.

MORRISON—Bonita F., Dept. 059-3. Seniority date Oct. 13, 1958, retired June 30.

RICHARDS—James K., Dept. 142-1. Seniority date Sept. 26, 1957, retired June 27.

TINKHAM—Ethel C., Dept. 101-6. Seniority date May 14, 1947, retired June 30.

TROTTER—Kenneth H., Dept. 250-3. Seniority date March 3, 1959, retired Feb. 28.

WHITE—Floyd A., Dept. 574-1. Seniority date July 20, 1936, retired June 13.

Rider-Driver

CONVAIR

SHARE RIDE—El Cajon to Lindbergh Field plant, 8 a.m. to 4:45 or 5 p.m. shifts; phone A. L. Baber, ext. 522 LF or (home) 442-2726.

Births

CONVAIR

PILLIFANT—Daughter Gina Evadne, 7 lbs. 2 oz., born June 23 to Linda and Leo Pillifant, Dept. 059.

General Dynamics News

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FB-111A Work Earns Air Force 'A-Plus' Grade

(Continued from Page 1)

agency. Jack Berggren is F-111 AGE program manager.

A. E. Hinck, chief of the DCAS quality assurance division, and J. S. Garcia, deputy chief, are in charge of the incremental FACI activity for DCAS at Convair.

R. E. Thompson, supervisor of the DCAS quality assurance branch at Air Force Plant 19, and O. D. Stuard, aircraft quality control specialist, handled inspection of the aircraft elements for the FB-111A.

John F. Harrison, supervisory space systems quality control assistant, and Andrew R. Pond, space systems quality control specialist, handle the AGE unit FACIs for DCAS at Kearny Mesa.

Fort Worth division representatives for FACI activity are Charles Roman, engineering resident representative, and Art Mandale, configuration management resident representative.

George S. Oliver is Convair F-111 configuration management FACI coordinator, assisted by key Convair personnel including Ray Schulte and George Stringfellow of engineering; Bill Wade, Les Dassoff, and R. G. Goldinger of quality control; Wes Kellogg and Gil Rolston of planning, and operations personnel under the direction of Harry Rote and Bill Barth.

Representatives from the F-111 Systems Program Office at Wright-Patterson AFB, the Air Force Plant Representative's Office at Fort Worth, and Fort Worth division were at Convair recently for a formal FACI review following completion of the incremental inspection on FB-111A No. 3 parts. No discrepancies were found at the time of the formal FACI inspections.

Incremental FACI of the SRAM pylons for the FB-111 also is scheduled at Convair this month.

Convair provides a wide range of F-111 parts, assemblies and support activity. Included are:

Aft center fuselage side assemblies, which form the nacelle inlet duct structure.

Fixed cowl and blow-in door assemblies which form the leading edge and forward section of the inlet engine duct.

I-78 spikes, 10 feet long and tapering to a point at each end, which are installed in each engine air inlet and move to regulate air flow for optimum engine performance at different speed ranges.

Stabilization booms which form the upper contour of the fuselage from the crew module to the forward edge of the wing glove.

Pivot armament pylons designed to maintain airstream alignment regardless of wing-sweep position.

Fixed armament pylons to carry external stores and a variety of armament.

FB-111A SRAM pylons and adapters, a two-piece assembly consisting of an adapter section which mates to the pivoting mechanism within the wing and a jettisonable lower section for armament racks, systems, and the ejection mechanism.

Electronics bays forming the forward fuselage section from the crew compartment module to the nose radome.

600-gallon external fuel tanks, 25 feet long and 30 inches in diameter, and fixed and pivot pylons.

Weapons bay tanks, each more than 13 feet long, for primary and secondary fuel supply storage.

Inlet fiberglass and ram panels, part of the nacelle inlet assembly.

Ferry wing tips—slip-on tips which extend the F-111A wing about four feet for increased range.

Wing pivot fittings which connect the wings to the support structure and enable the pilot to alter the wing-sweep in flight.

Miscellaneous detail parts—ranging from small brackets to 13-foot-long longerons.

Welded assemblies including steel and aluminum tubing, ducting, expansion bellows and flanges.

Mechanical aerospace ground equipment to assist in testing, maintaining, and repairing the F-111 weapon system.

Electronic aerospace ground equipment for use in test and checkout of the F-111 weapon system.

Mesa College Class Sees Electronics-SD

Students from an "integrated circuits" class at Mesa College visited Electronics-SD recently for a tour of Dept. 428's microelectronics laboratory.

D. A. Graybill, design specialist in charge of the lab, briefed the group. Roland Pierce, a quality control engineer in Electronics-SD's Dept. 921, was a student in the class and handled arrangements for the visit.



OUTSTANDING GRAD—Kenneth Catlin of Convair's Dept. 553-2 receives 1968-69 plaque for outstanding achievement in Master of Science in Management Science program at United States International University from Dr. John S. Wright, left, dean of the Graduate School of Business Administration. Jack Croft, chief of educational services for Convair, is at right. Convair sponsors annual award.

Sr. Electronics Engineer Named Outstanding Management Grad.

Kenneth Catlin, a senior electronics engineer in Convair's Dept. 553-2, was selected recently by the faculty of United States International University's Graduate School of Business Administration to receive the first Convair division-sponsored annual award for the most outstanding graduate in USIU's Master of Science in Management Science program.

Catlin received an engraved plaque and letter of commendation from Dr. John S. Wright, dean of the Graduate School of Business Administratiton.

His name also was engraved on a perpetual trophy at the University.

Although the annual award is sponsored by Convair, Dr. Wright said selection of a Convair employe as first recipient was a coincident.

Ten MSMS degrees were awarded by USIU at the end of the spring quarter. Two of the 10 were received by Convair employes—one by Catlin and one by John Rodenrys of Dept. 574-3.

Daniel T. Kuczon of Convair's Dept. 951-6 received a master's degree in business administration from the university.

Jack Croft, chief of educational services, said Convair has about 75 employes among 225 students in the MSMS program at USIU's Elliott Campus.

Catlin received his bachelor's degree in electrical engineering at Lehigh University in Bethlehem, Pa., and has been with Convair 12 years. He completed three of the nine courses required for his MSMS in-plant and the other six on the university campus.

Kalitinsky Appointed To Scientific Post

(Continued from Page 1)

important to the future growth of varied scientific programs for Convair.

Kalitinsky, a graduate of the Swiss Institute of Technology in Zurich, has been with Convair since 1961 and previously had served as Centaur assistant program director-engineering and as director of unmanned spacecraft.

Before joining Convair, he had been with Fort Worth division for six years. In 1949, he became the youngest engineer to win the Manley Memorial Award from the Society of Automotive Engineers.

Engineers Top Goal In Cost Reduction

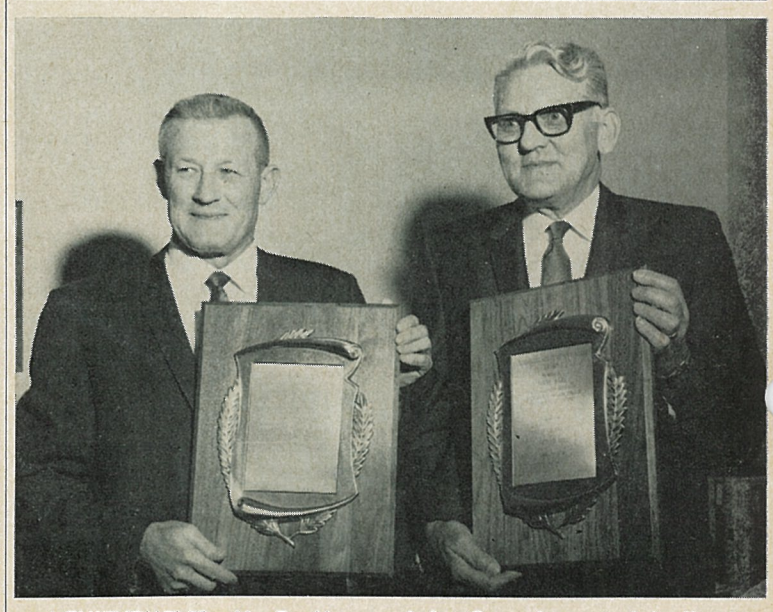
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data processing and evaluation area, headed by C. K. Anderson, which were primarily instrumental in acquiring the trophy for product design.

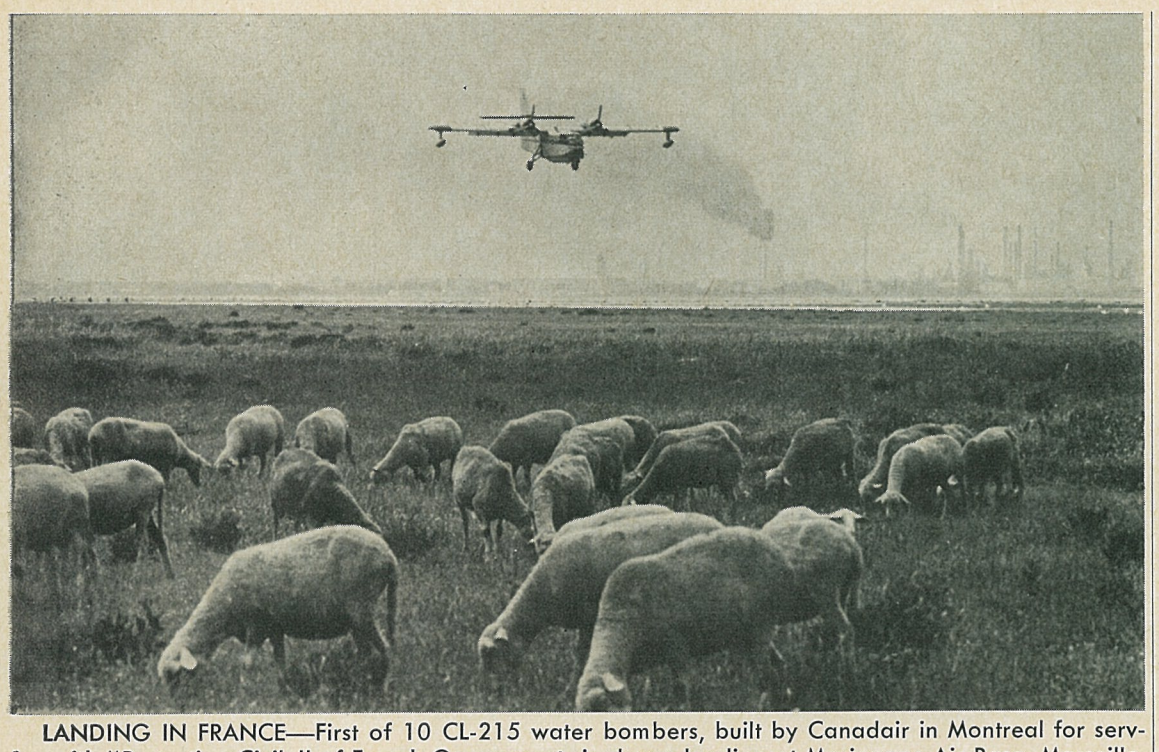
Product design had $359,600 in cost reduction projects audited and $49,815 savings from Employe Suggestions approved during the second quarter.

T. W. Ochodnicky, engineering administration and services project coordinator, said this represented both the largest cost reduction amount and largest percentage of increase over the previous quarter within the department, based on number of employes.

It also brought total cost reduction savings for the research and engineering department to $663,000 for the first half of the year.



ACHIEVEMENT—H. E. Moose, left, Convair material director, displays Creative Achievement Award of castings industry which was presented to Convair at 1969 Castings Exposition and Conference in Long Beach. Harry Warn, right, Dept. 820-0, holds Purchasing Agent of Excellence Award which he received for developing successful cost reduction program through purchase of castings.



LANDING IN FRANCE—First of 10 CL-215 water bombers, built by Canadair in Montreal for service with "Protection Civile" of French Government, is shown landing at Marignane Air Base, Marseille, after long over-water flight from Canada. It is now in service combatting forest fires in heavily wooded areas of Southern France.

GD/NEWS Will Not Appear on July 23; Next Publication Date to be Aug. 6

Issues of General Dynamics NEWS that normally would appear July 23 will not be published. The action is part of a Corporate-wide effort to substantially reduce costs.

Affected are Pomona, San Diego, Fort Worth, Quincy and DatagraphiX editions as well as the Mail Edition. Also dropping issues during July is Stromberg-Carlson, while Electronics-Rochester and Electro Dynamic will drop August issues.

Staff vacations are being scheduled to take advantage of the period of relaxed newsgathering.

Regular bi-weekly publications will resume Aug. 6.

Brick Works Acquired By General Dynamics

General Dynamics has announced acquisition of the Powell & Minnock Brick Works, Inc. through purchase of its outstanding stock. Powell & Minnock, located in Coeymans, N.Y., near Albany, will operate as a sister company of Darlington Brick and Clay Products Co., also a General Dynamics subsidiary.

William F. Minnock Jr., formerly president of Powell & Minnock, will continue to manage operations and will become a vice president of both Powell & Minnock and Darlington Brick. Howard R. Davis will be president and M. James O'Brien Chairman of the Board of both companies. O'Brien is also president of Marblehead Lime Co., a part of General Dynamics' Resources Group, which operates coal mines, quarries, brick and lime plants and distributes construction materials.

"The acquisition of Powell & Minnock," O'Brien said, "will enable us to better serve customers in the northeast, particularly in the New York metropolitan market. Their well known standard brick products supplement the Darlington line of multicolored glazed and face bricks."

General Dynamics Receives 'Fighter Aces' Membership

General Dynamics was made an associate member of the American Fighter Aces Association at the organization's annual meeting recently in Colorado Springs.

Capt. J. S. Swope, Navy deputy AFPRO at Fort Worth division, received the plaque for General Dynamics at the meeting and presented it to Frank W. Davis, Fort Worth division president.

AFAA is comprised of pilots who have shot down at least five enemy aircraft in aerial combat. Only 460 Americans qualify for the society. The association's primary role is to furnish scholarships for air-minded youngsters.

Swope was one of four Fort Worth-based members of AFAA to attend the meeting. Others were George Bostwick, manager Grumman-Hughes activities; R. L. Johnson, director flight / quality assurance; and Elmer Richardson, assistant program director Mark II.

Capt. Swope was credited with 10 aircraft in World War II. Flying a F-4F Wildcat, he downed five enemy aircraft — including three dive-bombers and two Zeros —during the Battle of Guadalcanal. He also got seven "unconfirmed" planes. Later, while flying a F-6F Hellcat from the USS Hornet, he was credited with five more "kills."

Bostwick shot down 15 German aircraft in Europe while flying a P-47 with the 56th Fighter Squadron. He is one of the few Allied fighters credited with bagging a twin-engine jet, the Messerschmitt 262 which the Germans hurried into service near the war's end.

Richardson's record included eight kills, one bomber and seven Zeros, in eastern China. He flew P-47s as a member of General Chennault's famed Flying Tigers in 1942-43.

Johnson was voted an honorary member of AFAA for professionalism exhibited as one of the nation's top test pilots. He flew 180 missions as a fighter pilot in the Mediterranean Theater in World War II and later amassed 4,500 hours test piloting virtually every type of Air Force plane. He set the world's speed record in 1948 in an F-86A.

Another Fort Worth division employe, James J. Johnson, is also a member of the association. He is credited with downing 10 MIGs during the Korean War. Johnson is resident manager at Nellis AFB, Nevada.

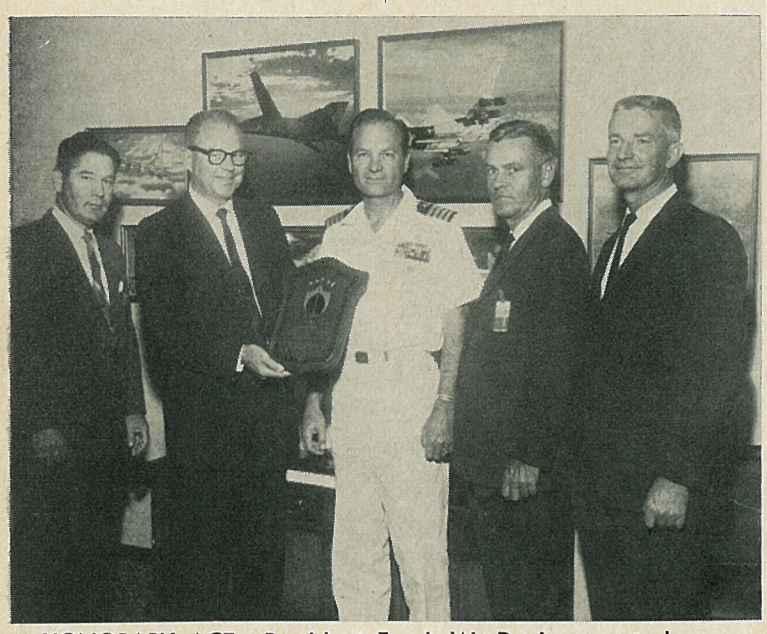
Heat Coatings Under Study

The Air Force has announced that the effects of space on heat control coatings on Convair's OV1-17 satellite now orbiting the earth are being studied by engineers in the Nonmetallic Materials Division of the Air Force Materials Laboratory at Wright-Patterson AFB, Ohio.

The OV1-17 was one of four vehicles launched March 17, 1969, from Vandenberg AFB, Calif., in a multiple launch from one Atlas booster.

Thermal control coatings, so called because they are tailored to absorb or reflect specific amounts of the sun's energy, are being evaluated for their stability in the space environment.

The coatings on the OV1-17 experiment were selected on the basis of data from Convair's OV1-10 satellite experiments and laboratory simulation tests.



HONORARY ACE—President Frank W. Davis accepts honorary membership in American Fighter Aces Association for General Dynamics from Capt. J. S. Swope, Navy deputy AFPRO at Fort Worth division. Other aces assisting in presentation, from left: George Bostwick, Elmer Richardson, and R. L. Johnson.

Mars Fly-bys Weeks Away

Mariner 6 and 7, launched Feb. 24 and March 27 by Atlas-Centaur 20 and 19, have been reported in good condition in their cruise en route to Mars.

Three day rehearsals and tests of tracking and telemetry equipment in preparation for the Mars fly-bys, less than a month away, have been completed. After the last mid-course corrections and man-made orbit perturbation for the flight, trackers estimate that Mariner 6 will approach within 2,160 miles of the surface of Mars at one second after 10:19 p.m. PDT, July 30 and Mariner 7 will fly 2,040 miles above Mars at 32 seconds after 10 p.m. PDT, August 4.

At 3 a.m. tomorrow (July 10) Mariner 6 will be 43,600,000 miles from earth, 8,100,000 miles from Mars and will be going 31,300 miles an hour. Mariner 7 will be 41,986,000 miles from earth, 9,-932,000 miles from Mars and will be going 31,185 miles an hour.

Three Receive NASA Awards

Three Convair employes have received cash awards from the National Aeronautics and Space Administration (NASA) for their development of technical innovations while working on space projects.

The men, W. E. Witzell, Dept. 572-1, C. J. Kropp, Dept. 572-1, and S. H. Logue, Dept. 596-0, became eligible for the awards when NASA issued a NASA Tech Brief on their work. A Tech Brief is a short paper summarizing specific innovations from the U.S. space program to encourage commercial application.

Witzell and Kropp received their $25 award for a study of weld joint strength and mechanical properties in 2219-T28 aluminum alloy. Logue received his $25 award for a system that converts optical phase changes to RF.

EB's Procurement Over $50 Million

The procurement department of Electric Boat division placed orders for over $50 million in 1968, according to Don H. Painter, department manager.

"We did business with 3,073 suppliers in 46 states", Painter said. "Our records show that 80 per cent of our vendors were in the small business category, and almost half the dollar volume went to those small business firms."

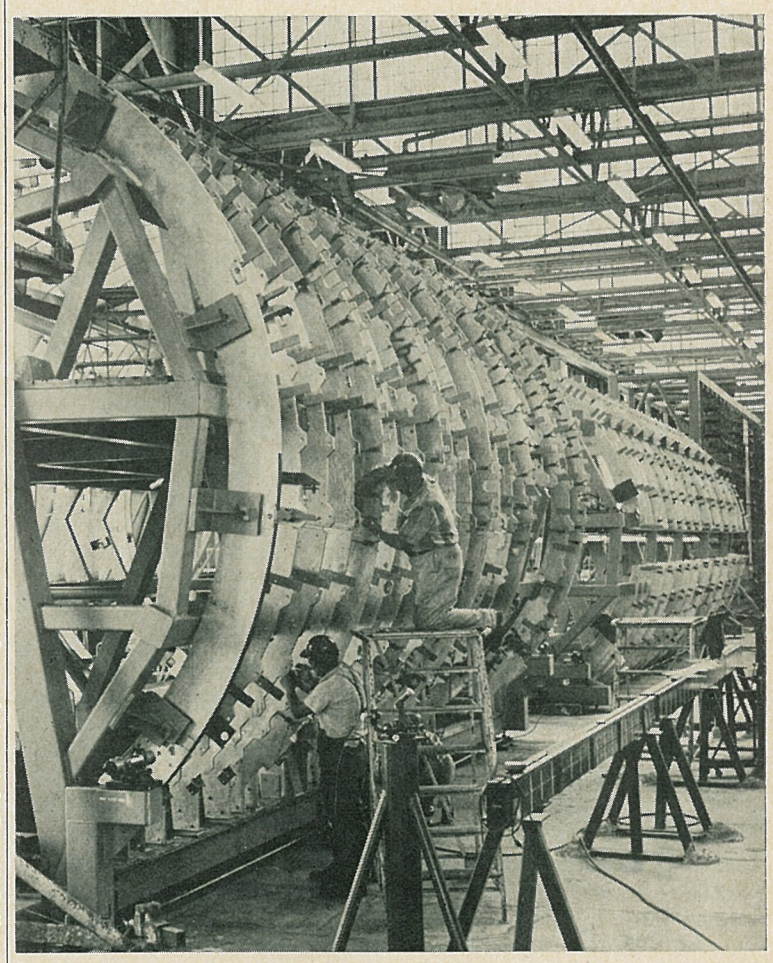
Connecticut ranked highest, both in dollar volume and in the number of suppliers. New York, Massachusetts, New Jersey, Pennsylvania, California, Rhode Island and Ohio followed in that order.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

CHARLES T. KRUSE (1953) from Pomona division to Electric Boat division as manager of accounting control; **LEONARD J. ORYSIEK** (1964) from Convair to standards engineer, Stromberg DatagraphiX; **HENRY W. CIANFLONE** (1959) from Convair to DatagraphiX as senior administrative engineer; **RICHARD E. BURKE** (1966) from Electric Boat to Quincy as assistant general superintendent; **ROBERT P. GROESBECK** (1967) from Electric Boat to design engineer, Quincy; **EDWARD A. GUTTZEIT** (1957) from Convair to EDP programmer, DatagraphiX; **THOMAS W. NICHOLS** (1966) from Electric Boat to contract administrator, Electronics, Rochester; **DURHAM MAXIMOVICH** (1951) from Electronics, Rochester to Pomona as labor relations assistant; **SAM CHIOVOLONI** (1955) from Quincy to test operating engineer, Electric Boat; **MICHAEL GRACE** (1959) from Quincy to planner, Electric Boat; **CHARLES H. ROBARDS** (1963) from Pomona to General Dynamics Dayton office; **ROBERT P. WHITTEN** (1966) from Electric Boat to Quincy as systems integrated specialist; **LEAMON H. STRICKLAND JR.** (1966) from Convair to Pomona; **DANIEL GONSALVES** (1957) from Quincy to planner, Electric Boat; **DAVID L. PERKINS** (1965) from Electric Boat to Quincy as engineering assistant; **BERN R. SWARTS** (1935) from Electric Boat to Convair as senior quality control engineer; **RONALD L. REITER** (1956) from Electronics, San Diego to DatagraphiX as production scheduler.



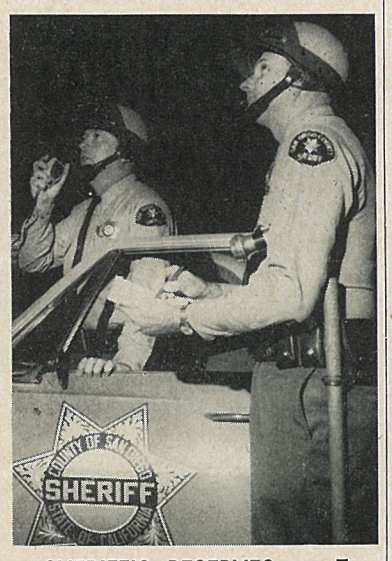
MASSIVE TOOLING—Drill fixture for left hand side 1/3-panel of D section for DC-10 tri-jetliner fuselage is being completed at Convair division's Lindbergh Field plant in San Diego. Attaching details are Richard J. Benker, left, and M. L. Cole, both Convair jig and fixture builders. Convair will build fuselage sections for McDonnell Douglas.

Arm of the Law

Volunteer Deputy Sheriffs Spend Weekends on Duty

Many Convair employes spend their leisure time working on community services activities, but few with such dedication as volunteer members of the San Diego Sheriff's Reserve.

Serving strictly without pay, they provide their own uniforms, firearms and accessories — and devote an average of 20 hours a month to a variety of duties in supporting the regular force.



SHERIFF'S RESERVES — Two Convair employes work on their volunteer job as reserve members of San Diego County Sheriff's department. At left is Sgt. Norm Keith, Dept. 146-3, on mike while Sgt. Gene Bell, Dept. 832-5, takes notes.

"It gives a lot of pride and self satisfaction and it's a complete change from the day to day routine," Norm Keith, a quality control engineer in Convair's Dept. 146-3 and a sergeant in the reserve, commented.

Reservists work on patrols and "stakeouts," transport prisoners from outlying areas to the county jail to free regular deputies for other duties, help with crowd and traffic control at parades and special events, make night checks of schools, businesses and homes of vacationers, and patrol schools and school grounds during evening dances and sports events.

Personal injury sometimes results. Keith, a reservist for 13 years, has been injured twice — suffering a broken hand in arresting a drunk and being kicked in the head during a scuffle with a motorcycle gang.

Before he married, Keith devoted as much as 100 hours a month to reserve duty. Now with a family, the number of hours has dropped.

T. C. Mitchell of Convair's still photo Dept. 519-0, also a reserve sergeant, said work with the department is educational, and can be enjoyable.

Some of the weekend patrols are in the Palomar and Cuyamaca Mountain areas and, unless trouble develops, can be an "interesting weekend ride through some beautiful scenery."

More volunteers are needed. Interested employes can obtain details by phoning the Sheriff's Department, 232-3811, ext. 255.

Reservists start by attending school three hours a night two nights a week for 14 weeks to learn criminal law, investigation procedures, narcotics problems, traffic control, first aid, and practical and legal aspects of firearms usage.

Picnic Tickets Selling Well

Ticket sales for the Convair Management Club picnic-ball game, July 12, are going well and will close out at noon tomorrow (July 10).

The price of the ticket includes a $3.50 reserved seat at the San Diego Stadium for the Padres-Atlanta Braves game, a free picnic lunch including sandwich and salad, various entertainment and a raffle.

Prizes for the raffle include a complete set of golf clubs, a vacation for two in Las Vegas, a home beer bar and keg of beer, a 30-06 rifle with scope, a portable TV set, indoor rotisserie, two Charger season tickets, tape recorder, color Polaroid camera, 7x35 binoculars, deluxe barbecue, Skill jig-saw and a number of smaller prizes.

The picnic will be at the CRA Missile Park from 3 p.m. to 7:30 p.m. The ball game at the stadium begins at 8 p.m.

Ticket prices are $3.50 for adults and $2.50 for children under 12.

Dr. Armstrong Gets Creativity Award

Robert C. Armstrong, M.D., manager of Convair's life sciences Dept. 592-0, recently was presented the San Diego Institute for Creativity's annual award for creativity in recognition of his development of the dry immersion bed.

The bed, in which a test subject or patient lies on a waterproof sheet while floating "in water," was developed originally to study effects of simulated weightlessness on the body but has been undergoing clinical evaluation in hospitals.

Son of G. W. Eaton Tours Cape Kennedy

Michael Eaton, son of G. W. Eaton of Electronics-SD, toured Cape Kennedy space flight facilities as one of the rewards for winning a first place in the California State Science Fair in Los Angeles in May.

Michael also was a winner in the Greater San Diego Science Fair in April.

Vast Engineering Task Completed

(Continued from Page 1)

DC-10-10 began in January, 1968, when Convair engineers were assigned to the McDonnell Douglas Long Beach plant to assist in Phase 1 engineering design.

Convair received the contract to produce DC-10 fuselages in July, 1968. First production drawings were released in November, 1968.

Delivery of the first DC-10-10 fusleage sections from Convair's Lindbergh Field plant are scheduled for November and December.

Before the DC-10 program was instituted, Yale served several years as program manager for Convair's Douglas support program.

In that program, Convair engineers devoted more than 600,000 hours to support DC-8 and DC-9 design. The division also handled numerous tool manufacturing tasks and produced galley service doors for the DC-9.

Kesler Is Chairman Of '16 Historic Days'

Robert Kesler, Dept. 572-2, is chairman of the "Key 16 Historic Days" celebration now under way in San Diego in conjunction with Fiesta 200 and the 200th Anniversary.

The "Key 16 Historic Days" celebration began July 1 and will end July 16 with the annual trek to Serra Cross, commemorating the date San Diego began (July 16, 1769).

Art Show Planned In CRA Clubhouse

Personnel interested in displaying their works of art at an all-Convair art show can get information by calling Karen Rose, ext. 1111 KM, or Al Riedler, ext. 1777 KM.

Tentative plans are for a show in the CRA Clubhouse with all mediums to be exhibited—whatever the material.



EDUCATION HONORS—Officials present for dinner at which Convair men received San Diego Evening College awards were M. V. Wisdom, left, Convair director of industrial relations, and, at right, Dr. Robert Hamilton and Kenneth Fawcett of San Diego Community Colleges. Len Breen, third from right, received Associate in Arts degree. Displaying Certificate in Industrial Supervision, from left, are Nick Valentino, Gerhard Gross, George Zoellner, Gary Pire, and Bill Kent.

SAVE Inducts 11 Convair Men

Eleven value engineers from Convair's Dept. 561-0 were inducted as new members of the San Diego chapter of the Society of American Value Engineers at its June 18 meeting.

They were Glenn Bancroft, Tom Boyer, Joe Comber, Charles Hibert, Robert Hinck, Walt Jaeger, Jim McGan, Fred Pearce, Phil Swanson, Hal Wegener, and Ward Willcutt.

Richard B. Thompson of Convair's Dept. 059-0 was installed as treasurer of the chapter for the coming year. H. P. Williams, chief of design support for Convair, was presented a special "rooster booster" award for exemplary work in securing new members for the chapter during the previous month.

$1,142 Awarded For Cost Cuts

A Lindbergh Field dispatcher, D. V. Haynes, Dept. 059-0, has been awarded $1,142.90 for an Employe Suggestion recommending changes in the fabrication procedures of F-111 detail skins.

Originally the skins were formed, rough trimmed and age hardened before they were sent to a vendor for chem milling and returned to Convair for trimming. However, the age hardening created problems in the processes that followed it.

Haynes suggested that the age hardening be done after the chem milling and final trimming. Although it was first thought to be impractical, it was later decided that the problems of handling the material in a hardened condition were greater than if the material had been left in a soft state.

Toastmaster Club Officers Elected

General Dynamics Toastmasters Clubs have elected new officers.

Convair Toastmasters 3745 officers are Ray Behlman, president; Robert Frederick educational vice president; Floyd Glick, administrative vice president; Harvey Seibert, secretary; Tom Phillipp, treasurer and Bill Coleman and Marvin Holmberg, sergeant-at-arms.

Dynamics Toastmasters 457 officers are Dick Freedman, president, Convair; Ed Schwartz, educational vice president, Convair; Bill Gordon, treasurer, Convair; John Gache, sergeant-at-arms, Convair; Ed Collier, administrative vice president, Stromberg DatagraphiX and Irv Litchfield, secretary, Stromberg DatagraphiX.

Toastmasters 3745 meets at 4:30 p.m. every Wednesday, Room C, CRA Clubhouse.

Dynamic Toastmasters meet at 5:30 p.m. every Thursday, Room C, CRA Clubhouse.

In-Plant Studies Reach Climax At Graduation Awards Dinner

Employes who had completed course requirements for Certificates in Industrial Supervision and an Associate in Arts degree from San Diego Evening College through Convair in-plant courses were honored at an awards presentation dinner June 25 in the Kearny Mesa plant cafeteria.

Leonard J. Breen, who had completed 60 units of college work through in-plant and campus courses, was presented his Associate in Arts degree by Dr. Robert Hamilton, president of San Diego Evening College.

Receiving certificates from Kenneth Fawcett, coordinator of vocational education for San Diego Community Colleges, were Nicholas Valentino, William Kent, Gerhard Gross, George Zoellner, and Gary Pire.

Other Convair men who had completed certificate requirements but were unable to attend the awards dinner were Roger Wallace, who earned a Certificate in Physical Sciences, and Frank Hinton Jr., who earned a Certificate in Industrial Supervision.

About 100 Evening College students, wives and guests attended the awards banquet.

Convair also presented a special certificate to Fawcett in appreciation for his 13 years of service to Convair as vocational coordinator for the Community Colleges.

Fawcett said the vocational education program began in 1942 in San Diego to fill World War II industrial education needs and has served as a pattern for similar programs throughout the state.

M. V. Wisdom, Convair director of industrial relations, commended the students and said 8 or 10 years ago promotions at Convair were based primarily on recommendations of supervisors but that now a great deal of emphasis is placed on the individual's effort in preparing himself educationally as well as in job performance.

"Receiving the certificate or degree doesn't give you a one-way ticket to advancement, but it does give you an advantage," he said.

"The time you have taken to improve yourselves will pay off in the long run."

$24,125 Allocated By Con-Trib-Club

Grants and pledges totaling $24,125 were approved during June by the Convair employes' Con-Trib-Club committee.

A pledge of $22,500, payable in three equal yearly installments, was made to the building fund of the Children's Hospital and Health Center.

Episcopal Community Service was granted $1,200 toward purchase of a new truck.

At request of the Vandenberg AFB employes' advisory committee, $175 was allocated to Guide Dogs for the Blind, Inc., and $250 to the American Cancer Society.

Discount Tickets

Tickets are on sale at all CRA and employe benefits outlets for the following upcoming events:

The Salt Lake City Mormon Tabernacle Choir concert is scheduled for 8 p.m. Friday, July 18, at San Diego Sports Arena. All tickets are $2 and there will be one performance only.

Ticket deadline is July 11 for General Dynamics Night at the Ringling Brothers-Barnum and Bailey "Greatest Show on Earth" circus July 16 at San Diego Sports Arena. There are $2 and $4 tickets ($1 saving on each) available.

Discount books for Fiesta 200 events in Old Town are on sale at $2.25 (a 75-cent saving). Tickets cover Los Voladores, Fiesta Ballet, magic shows and marionettes.

Kaye's Son Honored For Highest Grades

Robert Kaye, son of Dr. Samuel Kaye of Convair's space sciences Dept. 596-0, received the Peter W. Ross Award for being the senior with highest grade point average at Point Loma High School and will enter the University of California at Berkeley this fall.

Kaye maintained a straight A in academic subjects at Point Loma, received a Convair Management Club scholarship and an "outstanding student" award from California Savings and Loan Association, was named a Governor's Scholar, and was a National Merit finalist.

In addition to his scholastic achievement, he was a key player on the Point Loma High football team last year.

Convair Clerk Now Pan-Am Stewardess

Judith Ann Echols, former Convair Service Center clerk, was recently graduated from Pan American World Airways' stewardess school and is now based in New York flying to Europe, Africa, Central America and the Caribbean. She is a 1968 graduate of University of Texas at Austin.

LARGEST CARGO SHIPS UNDER WAY AT QUINCY

Quincy division is building three 875-foot commercial transports for Lykes Brothers Steamship Co., Inc., under a $98 million contract. The world's largest cargo transports, they are scheduled for delivery in 1971.

TRUCKS WEIGHED ELECTRONICALLY

A recently completed electronic truck weighing facility at Material Service division's Thornton quarry makes possible the loading of as many as 3,000 trucks in a single day.

New Quarters For Rockhounds Include Store of Equipment

To most people a rock is something to throw into a pond or stumble over.

But in the skilled hands of CRA Rockhounds a rock becomes a thing of beauty. Cut, ground and polished until it shines and changed into bookends, cabinet knobs and jewelry.

The Rockhounds have recently moved into new quarters in Western Town, adjacent to Missile Park, equipped with saws, grinders, polishers and all other necessary equipment.

The rocks are acquired by the club members themselves from various sources and it is no accident that many are also members of the Adventurers Club.

Within the near future the club hopes to put up a relief map of Southern California and Arizona with the best rock sites marked off along with information on what type of rocks to find there.

The club also has books on mineralogy, geology etc.

Classes for beginners are conducted Monday, Tuesday and Thursday nights from 7 to 9 p.m. and Wednesday morning for second shift and those who can get away during the day.

CRA Dynamic 8 Hosts Dance For Australians

Thirty-six square dancers from Australia will be guests of CRA's Dynamic 8 square dance club for dinner and a dance Saturday, July 19, in the CRA Clubhouse auditorium.

Dinner will be served at 7 p.m. with dancing from 8 p.m. until midnight. Clark Elliott will be caller and cost, including the dinner, will be $2.50.

The Australians are on a tour after attending the national square dance convention in Seattle.

CRA dancers also have been invited to a dinner-dance being hosted for the Australians at 7 p.m. July 18 aboard the harbor cruise boat Marietta. Cost will be $2.50 and the event is being sponsored by the Spinning Wheel Squares of Ocean Beach.

Dynamic 8 will start a 16-week beginners' square dance class Sept. 16 in CRA Clubhouse. Phone John Young, ext. 1024 LF or (home) 278-1090, for details.

Spray Sealing To Trim Pounds Off Tri-Jetliner

Convair division has obtained McDonnell Douglas approval for a value engineering course that will trim about 200 pounds from each DC-10 tri-jetliner and save an estimated $126,700.

Robert C. Hinck, design specialist in value engineering Dept. 561-0, said sealant used to bond overlapping surfaces will be sprayed on instead of applied from a tube for both material and time saving.

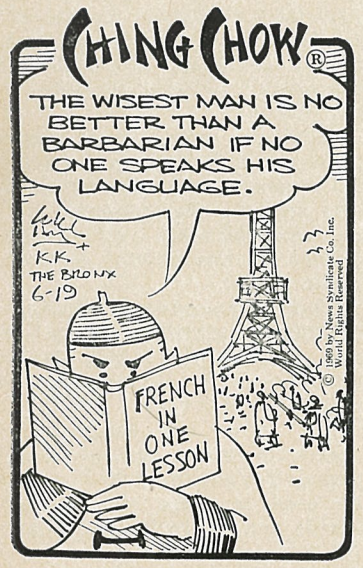
L. C. Hare, Jack Bryant and Joe Miller, all Dept. 046 factory specialists, and Charles Hibert and Robert Burns, Dept. 561-0 producibility engineers, proposed the change in technique last year after studying DC-10 fuselage fabrication specifications while on assignment at McDonnell Douglas' Long Beach facility.

They also investigated feasibility of applying the technique to DC-10 fabrication and instituted the change. Convair provided samples of materials sealed by the proposed method for a McDonnell Douglas test program.

Sealant will be supplied in frozen cannisters by a vendor firm, stored at about –20 F., and thawed to a liquid a few hours before use. After being sprayed on, the sealant will stand 30 minutes for solvent evaporation before metal parts coated with the compound are overlapped and riveted.

Six thousand linear feet of surface to be sealed was calculated in the Convair analysis. The technique will be used to seal surfaces in a variety of DC-10 areas,, ranging from wheel well and air conditioning system enclosures to all fuselage external skin joints.

Hinck said McDonnell Douglas also plans to use the spray sealing technique in its DC-8 and DC-9 programs. Convair now uses a similar technique in C-5A empennage fabrication and on other programs.



Sealey Winner In Net Tourney

Frank Mafnas, Ed Russ and Dennis Sealey won singles honors in the CRA-Convair Management Club men's tennis tournament for June.

Mafnas beat Manuel Fernandez 6-1, 6-4 for the novice singles title. In the intermediate singles, Russ downed Dennis Richardson 7-5, 3-6, 6-4 while Sealey took Mike Fager 6-4, 6-4 for the advanced singles crown.

In doubles play, Ed Zivolich and C. L. Baker won the round robin for the novice doubles. Frank Mafnas and Harold Mayer were runners-up. Mike Griggs and Dennis Richardson won the intermediate round robin after defeating John Fager and Mike Fager in a play-off set, 7-5. Both teams had taken 30 games in the round robin. Advanced doubles honors went to Dave Bennett and John Bennett who defeated Stan Griffin and Larry Chambers 4-6, 6-0, 6-0.

The women's tennis tournament will be August 2 (novice) and August 3 (intermediate). Mixed doubles play is scheduled for August 9. For information call Sharron Williams, 277-6206 or Thelma Zivolich, 223-1575.

Undefeated Teams Leading in Softball

Four undefeated teams took first place honors in the CRA softball leagues for the first half of the season.

In the fast pitch league, Pre-Design beat the Spoilers 6-1 to sew up the first half title, Although some games remain to be played as of presstime, no team has a chance to overtake them.

In the Tuesday Slow Pitch the Super Gnates remained undefeated by trouncing Material 16-6 to lead the league.

The GD/E Bombers blasted the DatagraphiX Reds 10-5 in the final game to remain undefeated in the Wednesday Slow Pitch League. Every other team had at least two defeats.

In the Thursday Slow Pitch, the Plant 19 All Stars edged the Supersonics 11-9 thus remaining undefeated and taking the first half title.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is July 29. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meeting July 16, 7:30 p.m., program includes two off-road racing movies. Aug. 2-3 backpack and hike to San Jacinto Peak via Palm Springs Aerial Tramway.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Silver Strand 25-mile ride July 12, meet at 9 a.m. at ferry parking lot. Oceanside 50-mile ride July 26, meet at Salk Institute, 7 a.m.

BONAIR FLYERS—Meeting tonight (July 9), 7:30 p.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting July 20, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m.

CHORUS—Rehearsals each Wednesday, 7:30 p.m.

COINEERS—Meet July 14, 7:30 p.m.

COUNTRY-WESTERN MUSIC—Meet each Thursday, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS—Meeting tonight (July 9) 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting 7:30 p.m., July 15, Gillespie Field Clubhouse.

GARDEN CLUB—Meeting Aug. 6, 7:30 p.m., Floral Association Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m., Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee (includes skates) $1. Free skate night, July 10.

JUNIOR SCIENCE—Workshop July 18, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot July 13 and July 27, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting July 17, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting tonight (July 9) 7:30 p.m.

ROADRUNNERS—Pine Crest outing July 11-13.

ROCKHOUNDS—No regular meetings until Sept. 10; rock shops open at Kearny Mesa and Gillespie Field.

SAILING—Meeting July 23, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting Aug. 5, 8 p.m., South Bay Club.

SPORTS CAR CLUB—Meeting tonight (July 9) 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE—Dinner-dance July 19, 7 p.m. Beginners class starts Sept. 16, 8 p.m. Regular sessions each Thursday, 8-10 p.m.

STAMP CLUB—Meeting July 10 and July 24, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOASTMISTRESS—Meet July 15, 7 p.m.

TRAILERS—Pine Crest outing July 19-20. Meeting Aug. 5, 7:30 p.m.

TROPICAL FISH—Meeting and workshop, July 21, 7:30 p.m.

WIVES CLUB—Luncheon meeting July 16, 11 a.m. Potluck and craft session July 23, 10 a.m.

WOMEN'S GOLF—Whispering Palms tournament July 12, 8 a.m.

Another Free Skating Session Scheduled

Convair ice skaters are in for another bonus July 10 at the House of Ice, 70th St. and Interstate 8.

A second introductory free skate session has been set for 6:15 p.m. Only charge will be 50 cents for those who do not have skates.

CRA Ice Skating Club members skate each Thursday, 6:15-7:45 p.m. for $1 which includes rental skates. Classes are conducted for beginning children and adult groups. Club members are invited to stay through the public skating session at no additional charge.

CRA Cyclists Slate 25, 50-Mile Rides

CRA Bicycle Club will take two rides during the last part of July, a 25-mile Silver Strand ride and a 50-mile Oceanside jaunt.

The Silver Strand ride will begin at 9 a.m., July 12 from the ferry parking lot with Agostino Arcidiacono as ride leader. The ride to Oceanside will begin at 7 a.m., July 26 from Salk Institute with John Burnett as ride leader.



REPEATER—Freda Magargal, right, Dept. 860-0, won Ernie Paul Memorial Trophy for second straight year at Mission Bay Golf Course last month. May Dean Schell, Dept. 515-0, president of CRA Women's Golf Club, is at left. Trophy is on display in CRA Clubhouse.

Freda Magargal For Second Time Wins Ernie Paul Golf Tourney

Freda Magargal won the fourth annual Ernie Paul Memorial Golf Tournament with a low gross score of 67 at the Mission Bay Golf Course June 14. Runner up was Agnes Sliger with a 68.

The tournament was played in conjunction with the monthly CRA women's golf tournament. Margaret Clark and Flo Kell won Flight A and Flight B in the regular tournament.

Mrs. Clark had a net 52 followed by Mrs. Magargal with a net 53. Mrs. Kell's net was 55 and runner up was Dorothy Miller with a net 58.

The Ernie Paul tournament is named after the late Ernie Paul, a General Dynamics Electronics-SD employe who was president of the Men's Golf Club and was responsible for forming the Women's Golf Club.

The next monthly tournament will be July 12 at Whispering Palms Golf Course. Tee time is 8:06 a.m. Call Freda Magargal, ext. 2933 KM for information.

Coin Club to Hear Police Detective

Detective D. C. Newby of the San Diego Police Department will discuss "Safeguarding valuables in your home" at a Convair Coineers Club meeting at 7:30 p.m. July 14 in the CRA Clubhouse auditorium.

Exhibits will have a "patriotic" theme. Give-away coin will be 1959D brilliant uncirculated cents. Three 1923P silver dollars will be given as door prizes and there will be a drawing for 12 silver dollars.

Success of the junior auction at the June 9 meeting has resulted in the club planning similar auctions for each future meeting. Members have been asked to bring more items of appeal to juniors for the auctions.

Trophy winners in June were Chuck Willey in the adult division for his display of nickels and Barbara Bertling in the junior division for her display of presidential bronze coins.

Roadrunners Plan Pine Crest Outing

Convair Roadrunners trailer club has scheduled an outing July 11-13 at CRA's Pine Crest resort in the Cuyamaca mountains.

A variety of recreational activity is planned and steaks and corn on the cob will be served at a Saturday evening potluck dinner.

All employes with trailers and campers have been invited. For information, call Ralph East, wagonmaster for the event, ext. 1569 LF.

New Commissioners Appointed For CRA

George Schmiedel, Convair's supervisor of recreation, appointed two new CRA commissioners at the last meeting of the CRA Employes' Council.

Alex Halyburton, Dept. 832-2, was appointed commissioner of the Radio Club and Ralph Mansfield, health club director, was appointed commissioner of physical fitness.

Pistol Team Places First

CRA Pistol Club team and shooters came away with several laurels in U.S. National Industrial Recreation Association (NIRA), National Rifle Association (NRA) competition.

Convair's team placed first in Region 7 (west coast), and 10th nationally (among 75). Individual shooters winning were: Don O'Brien, 17th, Warren Walker, 64th, Roland Schneider, 97th, and Charles Kropp, 137th in field of 372 for national individual ranking.

Club's pistol team for the second quarter include O'Brien, Jim Halfacre, Schneider and Walker.

Results of police range May 22 matches are: Masters — O'Brien, 289-8x; Schneider, 288-8x; Expert—L. Thomas, 276-6x; Dick Sutton, 272-4x; .45 cal—Schneider, 260; O'Brien, 249; Walker, 230 and Ernest Kampmann, 226; Sharpshooter — Bud Robinson, 245-2x; James Thomas, 222-1x.

Adventurers to 'See' Mexican Road Race

Two color films on the 1967 and 1968 "Mexican 1000' off-road races will be shown at a CRA Adventurers Club meeting at 7:30 p.m. July 16 in CRA Clubhouse auditorium.

The "Mexican 1000," sponsored each November by the National Off-Road Racing Association, covers rugged roads and trails from Ensenada to La Paz and is run by motorcycles, dune buggies, four-wheel-drive vehicles and other off-road vehicles.

CRA Horsemen Plan Cuyamaca Trail Ride

CRA Riding Club will meet at 7:30 p.m. tonight (July 9) in CRA Clubhouse to go over plans for a projected Cuyamaca mountain trip and trail ride. Those wishing to go must have their reservations in at this meeting.

The Riding Club board meeting will be at 7:30 p.m. July 23 in CRA Clubhouse. Plans will be made for a Pine Crest camping trip.

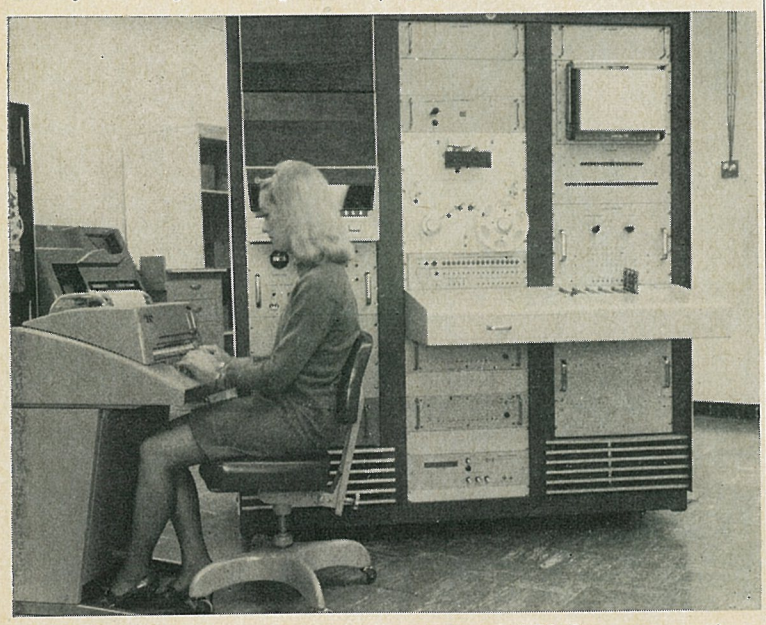
Flight Examiner To Address Club

The CRA Bonair Flyers will hear Wes Johnson, a Federal Aviation Agency (FAA) flight examiner, speak on flight examinations at their meeting at 7:30 p.m. tonight (July 9) in room C at CRA Clubhouse.

The meeting was designed to be a follow-on to the recent private pilot ground school course to help applicants pass the private pilot written examination.

New Electronic System Performs 30,000 Tests in Minute, 50 Secs.

Convair has developed a fully automatic electronic production test system capable of performing voltage, time and other electrical tests on digital electronic equipment and printing out an analysis of the test results.



TESTER—Judy Kay Thomas, Convair Dept. 053-0 secretary, demonstrates simplicity of operation of Convair's electronic production test system. She is telling system, via teletype, to test electronic module plugged in on table-like console at right.

Originally designed to automatically test F-111 AGE logic modules, the system is also being used to test complete Test Replaceable Units (TRUs) and other large assemblies.

Simplicity of operation, speed of testing, adaptability and large capacity are among system characteristics.

The system contains a small general purpose computer which is programmed to control and direct the tests. The operator initiates testing by loading the computer with the appropriate program via a punched tape. After this all communications to and from the computer are via English language type statements on a teletypewriter.

The operator types in the part number of the module or equipment to be tested. The computer interprets this, performs a confidence test of itself and the overall system, and proceeds with the test.

During the test periodic messages to the operator are printed out, informing him of the test status and directing him to take certain action.

If, for example, the test requires certain cables to be connected or units to be plugged into the test set, the computer, via printout, will tell the operator when to perform this action.

If the test fails, the particular test number which failed and the test points with their value and the value of other tests points on the module at the time of failure are printed out for the operator.

The data thus supplied enables technician to correct the deficiencies more efficiently.

According to B. A. Penners, Convair Dept. 553-1 group engineer, anyone can learn to operate the set with a minimum of instruction due to the English language printout.

Recently a piece of electronic equipment requiring 30,000 separate tests was checked out by the system in a minute and 50 seconds.

Attempts to test the same piece of gear manually had failed simply because there were so many tests that no one was able to get through them all without making a mistake. In order to get a comparison, manual summary tests were made in lieu of a complete test on each part. This operation took three hours.

With the use of adaptor cables, the automatic test system can be set up to test almost any piece of digital electronic gear.

The capability of the system will be increased soon by the use of magnetic tape memory storage instead of punched tape. Using punched tape with only a few programs per tape, the operator must replace the tape for each five or six different module types tested. With the magnetic tape at least 1,000 different module or larger assembly type programs can be stored and used without changing the tape.

The test system currently tests about 2,500 modules per month, primarily on a one-shift basis. According to Penners, its capacity is calculated to be about 10,000 modules a month on a two-shift basis. The limiting factor appears to be the amount of time needed to physically handle parts tested and the associated paperwork.

The conception and design effort for both the hardware and software of the test system was done in Dept. 553-1 and directed by Ray Waligorski, senior electronics engineer.

Overseas National Buys Convertible DC-10Fs

Overseas National Airways has ordered the first three wide-bodied DC-10F convertible freighter aircraft. Convair division produces DC-10 fuselages.

The order by ONA, a supplemental airline, is the first for the convertible version of the McDonnell Douglas DC-10. Two of the DC-10Fs will be delivered in the spring of 1973 and the other a year later.

Value of the ONA purchase, not including options for three additional DC-10Fs and spare parts, is approximately $50 million.

Jack Hurt, Convair DC-10 program manager, said the DC-10F convertible freighter will have the same exterior shape as other DC-10 models but will incorporate design changes associated with the 8½ by 11½-foot cargo door required.

"This initial order for the versatile DC-10F is another important milestone in the DC-10 program for Convair as well as for McDonnell Douglas," he said.

"Nine airlines already have placed 184 orders and options for the DC-10 in four models—Series 10, Series 20, Series 30, and the Series F convertible freighter."

ONA now has a fleet of 21 aircraft operating on commercial and military passenger and cargo flights in the U.S. and overseas and also is entering the hotel and cruise-ship field.

DC-10Fs will carry up to 330 passengers and baggage on intercontinental flights or will move up to 138,500 pounds of cargo non-stop on 3,200-mile transcontinent flights.

G. F. Steedman Hinckley, ONA president, said capabilities of the DC-10F to fly 5,600 statute miles with full passenger payload at speeds in excess of 600 mph fit ideally into Overseas National's flight patterns and will make possible, for example, non-stop charter flights from California to Germany.

DC-10Fs ordered by ONA will have a maximum gross takeoff weight of 530,000 pounds. A selection between Pratt and Whitney or General Electric engines had not been made when the ONA purchase was anonunced.

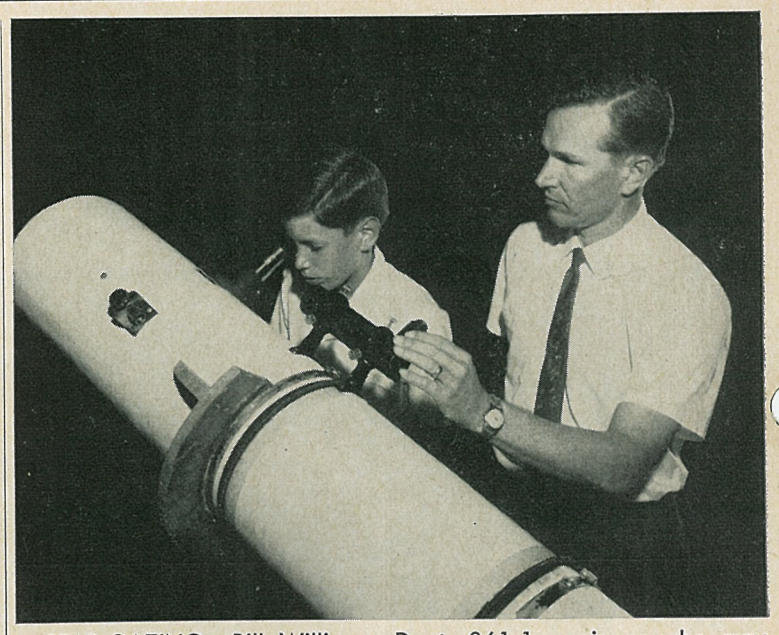
An 8½ x 11-foot door will swing up on the side of the fuselage for loading or unloading of cargo. The cabin, more than 18 feet wide, will accommodate standard air cargo containers or pallets.

Twenty-four standard (88 x 108-inch) or 20 larger (88 x 125 or 96 x 120-inch) pallets can be placed in the cabin. There also will be 3,040 cubic feet of cargo space in two lower baggage compartments for bulk freight, baggage containers, or cargo pallets.

When in use for passenger service, the entire cargo loading and restraint system will be removed and can be stowed in the lower cargo hold if desired.



MEASUREMENT PANEL—Stromberg-Carlson hosted spring meeting of General Dynamics Measurement Control Panel in Rochester. Representatives pictured are: (standing from left) Felix Broccolo, Stromberg-Carlson; Earl Peacos, Electronics division; Andy Woodington, Convair; Leroy Erwin, Fort Worth division; Gene Brewer, Pomona division. Seated are: (from left) Ed Bader, C. G. Franklin, Electronics division-San Diego; George Robinson, Canadair; Don Gregson, Electric Boat division; Bill Griffith, Quincy division.



STAR-GAZING—Bill Williams, Dept. 061-1 engineer who may have found a "lost" galaxy, gets a reading from his son Buddy, 10, member of Fort Worth division Astronomy Club.

198-Year Error

Engineer Astronomer Locates 'Lost' Galaxy

Bill Williams, an amateur astronomer who has taken his avocation seriously for only a couple of years, may have uncovered a galaxy that's been "lost" for a couple of centuries.

The Dept. 061-1 design engineer at Fort Worth division may have sighted and pinpointed the location of "M-91," a galaxy discovered in 1781 by Charles Messier, famed French astronomer.

During this time period, Messier located and catalogued 107 such nebulous objects, which are characteristically comet-like in appearance.

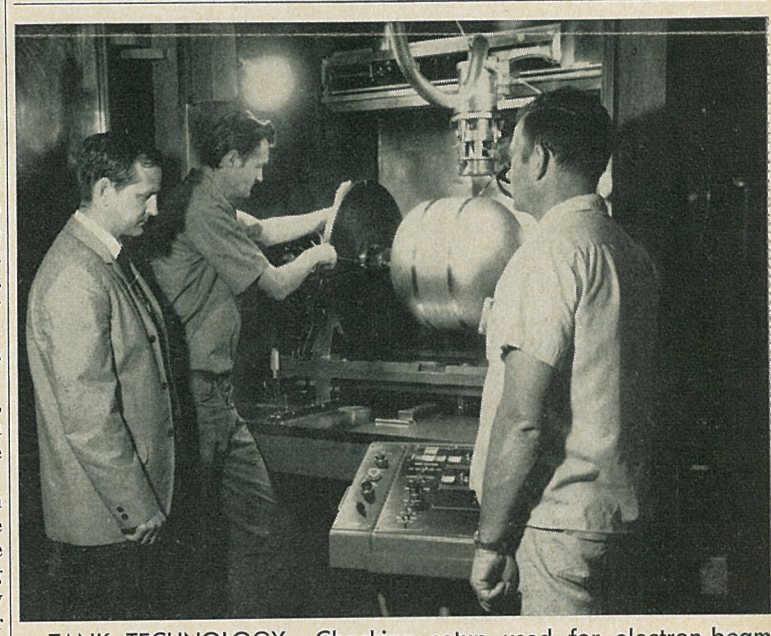
Over the years, however, one of the objects—M-91—became "lost." Astronomers couldn't find it based on coordinates furnished by Messier.

Williams checked Messier's mathematical computations carefully, using 1950 coordinates (the relative position of the earth and the objects has changed slightly over the centuries).

"My findings indicate that Messier made a slight mathematical error in fixing M-91's position," Williams said. "All evidence now indicates that a galaxy numbered 4548 in the New General Catalogue is, in reality, M-91."

Dr. Owen Gingerich, professor of astronomy at Harvard and foremost authority on Messier, concedes that Williams' computations appear to be correct. He has urged him to publish his findings.

If Williams' findings withstand scientific scrutiny, he will have cleared up a long-standing mystery.



TANK TECHNOLOGY—Checking setup used for electron-beam welding X2021 aluminum alloy propellants storage tank at Convair's Kearny Mesa factory are, from left, G. D. Lundquist of Dept. 491-0, E. C. DeWitt of Dept. 756-0, and B. E. Fuller of Dept. 759-0.

New Electron-Beam Techniques Used in Welding of Test Tanks

New Convair-developed techniques for electron-beam welding of X2021 aluminum alloy have been used by the division in fabrication of twelve 15-gallon aluminum and titanium tanks for the Air Force Rocket Propulsion Laboratory.

AFRPL will use the tanks in evaluating storability of various combinations of propellants and evaluating materials fabricated into small-scale tankage.

G. D. Lundquist, Dept. 491-0 manufacturing development engineer, said X2021 aluminum alloy was electron-beam welded for the first time at Convair in the tank fabrication project. He said technology developed has added to the overall welding capability of the division.

Lundquist noted that special problems in fabricating the tanks led to development of weld schedules utilizing the automatic weld sequence and seam tracking capabilities of the Sciaky electron-beam welder.

These procedures eliminate operator response and reflex time and significantly reduce danger of errors in the close-out section of the circular tanks.

The tanks are designed for maximum storage pressure of 100 pounds per square inch. They will be used to store nitrogen tetroxide and hydrazine propellants for at least five years.

Stromberg-Carlson Will Offer Stock

Stromberg-Carlson Corp., a subsidiary of General Dynamics Corporation, has filed a registration statement with the Securities and Exchange Commission covering a public offering of 600,000 new shares of Stromberg-Carlson common stock.

The proposed offering will make the stock of the General Dynamics subsidiary available to the public for the first time. General Dynamics now owns more than 99 per cent of the stock of Stromberg-Carlson and after the proposed offering will own approximately 89 per cent.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 15 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, August 6, 1969

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Would it be possible to pay second shift employees on Wednesday night when there is a Friday holiday ahead? It is difficult to get checks cashed on holidays.

A—It is possible, but would be more costly due to rescheduling payroll and data processing procedures.

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Q—As originally planned, CRA facilities at Kearny Mesa were to include a swimming pool. Has this been dropped?

A—CRA's long range plan includes a swimming pool but this has been deferred in favor of improving present facilities. When new facilities are next to be added the pool will be reconsidered.

★ ★ ★

Q—When CRA monthly golf tournaments are announced and starting times reserved I find it impossible to get an early tee time. It seems that reservations are made starting at midnight and by the time day shift players call all the good times are taken.

A—The practice has been changed as a result of your letter. There are seven starting times considered prime, from 7:30 a.m. to 8:30. In the future, two will be released to the first callers after midnight and five will be left open for the first callers after 9 a.m. With so many seeking to play, CRA has no choice but to follow first-come, first-served, as a general rule.

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Q—In our department, several interlacing groups have different first shift starting times: 7 a.m., 7:30 and 8. With this arrangement we only have seven hours in an eight-hour shift to operate as a team. Wouldn't it be more efficient to all start at the same time?

A—Hours of service departments are arranged with an eye to meeting the demands of departments served and sometimes this means staggering hours in order to adapt to the different work hours of these departments.

★ ★ ★

Q—Since the supersonic transport is in trouble, has General Dynamics considered scaling up the fuselage of the B-58 and making it an SST? It seems competitive with the Concorde in size and speed.

A—Yes, General Dynamics did consider the B-58 for this application and because of this GD probably was one of the real forerunners in the supersonic transport study field. However, in about 1963 GD withdrew from competition, foreseeing too many developmental and economic problems.

Wax Casting

Idea Derived From Hobby Applied To Tunnel Model, Earns $3,400

A process used in making frontier style muzzle-loading guns was applied to models of jet-age missile launchers for wind tunnel use recently and produced an Employe Suggestion Award worth $3,400.

Jerry Blumenthal, of Convair's low speed wind tunnel, whose hobby involves redesigning and building such guns of the past, suggested a "lost-wax" casting process in making 1/24-scale missile launcher models, instead of a costly machining process.

While building his muzzle-loader, Blumenthal discovered he could produce six special gun locks for his firearms by the casting process at the price of one by a former method.

Applying the process to the launcher models it was found that, provided a proper mass and density could be reproduced, they could be produced both faster and cheaper.

To produce the models by the original means, each launcher would have to be machined from Kennertium or Tungsten alloys. Because of required part geometry and their small size it was estimated that the cost per part would be $1,200 or more.

By Blumenthal's method the

(Continued on Page 2)



NEW CASTING PROCESS—Convair model-design engineer Jerry Blumenthal, right, explains new casting process for missile launcher models to E. B. Peterson, vice president-research and engineering. Blumenthal received $3,400 Employe Suggestion check for application.

First Italian-Built DC-10 Panel Shipped Via Liner and Truck

The first Italian-produced DC-10 fuselage panel was shipped July 24 from Aerfer Industrie Aerospaziali Meridionali in Naples and is scheduled to arrive at Convair's Lindbergh Field plant Aug. 11.

Fuselage part D-10, a right-hand window panel, was transported via Italia liner Michaelangelo to New York and thence by a truck to San Diego.

Upon arrival it will be mated with other panels of the fuselage section.

Aerfer, under Convair subcontract, has completed necessary tooling and fabrication and is producing above-floor-level skin panels and related parts for the tri-jetliner fuselages.

The first complete shipset, 27 panels, is slated for shipment from Aerfer by Sept. 21. The Naples-based manufacturer will produce 300 shipsets during the five-year contract.

Convair established a permanent residence office at Aerfer late last year with Pete Nico of Dept. 820-0 as resident office manager, Herb Mishler of Dept. 140-2 as quality assurance administrator, Ralph Steele of Dept. 144-3 as quality assurance representative, and Ed Carosella of Dept. 820-0 as subcontract administrator.

Aerfer's Pomigliano D'Arco plant, located six miles northeast of Naples, also produces skin panel sections for McDonnell Douglas DC-9, engine pod subassemblies for Boeing 747 and will manufacture vertical stabilizers for the DC-10.

Seven Earn Degrees In Quality Control

Seven Convair reliability control men have received degrees in Quality Control and Reliability from San Diego Evening College.

They are R. L. Carver and E. E. Chavez, Dept. 149-1, Gerhard Gross, Dept. 141-4, F. E. Hinton Jr., Dept. 143-6, F. E. Campbell, Dept. 144-1, C. V. Pereira, Dept. 140-2 and G. H. Zoellner, Dept. 140-1.

In addition to receiving Associate in Science degrees, Gross, Hinton and Zoellner received certificates of proficiency.

The degree program the men participated in was sponsored jointly by the San Diego section of the American Society for Quality Control and the San Diego Community Colleges.

Atlas-Centaur 18 Slated For Launch

Final preparations are under way for the Aug. 12 launch of Atlas-Centaur 18 which is to place Applications Technology Satellite E (ATS-E) into a circular, synchronous, near equatorial orbit.

This will be the second ATS mission for the Atlas-Centaur combination. The main differences from the previous mission (**GD/NEWS July 17, 1968**) will be a shorter parking orbit with the second burn occurring over South Africa instead of the Pacific Ocean, a more eccentric parking orbit to increase ATS-E velocity at transfer orbit apogee, and a yaw maneuver during Centaur first burn to reduce parking orbit inclination.

NASA's basic objective in the ATS program is to test advanced components and techniques for future communications, meteorological and navigation satellites. These tests include experiments for satellite communications, navigation, meteorology, data acquisition, precision stabilization, and micro-thrust propulsion.

ATS-E's primary mission is to demonstrate precision stabilization in synchronous orbit by use of gravity gradient techniques.

Other experiments aboard the spacecraft include tests of ion engine; resisto-jet; environmental measurements; magnetic damper; magnetometer; solar cell; degradation; millimeter wave transmitter and third harmonic generator.

The most notable change from previous ATS models is the carrying of an L-band repeater system in place of the higher frequency C-band system. This will take advantage of the new L-band channel for ground-to-aircraft communication.

The launch is scheduled for 3:53 a.m. PDT. The Atlas stage and Centaur first burn will place the spacecraft in an elliptical orbit with an apogee of about 2,760 nautical miles and a perigee of about 97 nautical miles. A second Centaur burn will place the spacecraft into an elliptical transfer orbit with an apogee of approximately 19,800 nautical miles.

After cutoff of the second Centaur burn, the Centaur guidance package will program a yaw maneuver of approximately 135 degrees to the right of the flight path to realign the thrust axis of the apogee motor.

Following the yaw maneuver the spacecraft is separated from Centaur which will then perform a retro-maneuver to preclude any possible interference with the spacecraft.

Project engineer for the ATS missions is G. W. (Gerry) Lucas, who also headed the "tiger team" review at the Cape last week. The launch will be headed by the ETR Convair launch crew with Dan Sarokon as conductor.

★ ★ ★

AC-18 Checked By 'Tiger Team'

A "tiger team" from Convair was at Cape Kennedy last week for a product review of Atlas-Centaur 18 launch vehicle for the upcoming Applications Technology Satellite-E (ATS-E) launch.

Team chief was G. W. Lucas with J. W. Swigart as Atlas program chief, R. B. Purcell as technical chief, C. C. Campbell Jr. in charge of reliability and quality assurance and C. Bierman as team coordinator.

Other members of the team and their areas of responsibility are:

Mechanical systems: R. T. Fox, team captain, J. D. Soltmann, H. L. Hahn and M. J. Debreceni.

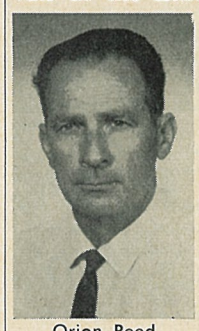
Electrical systems: F. L. Cook, team captain, and T. Shamshoian.

Flight control: W. F. Sauer, team captain, R. A. Shaw, C. K. Perkins, R. L. Shoff and LeRoy White.

Structures and Analytical: E. H. Christensen, team captain, C. Pruckner and B. G. Sherwood.

Reed Appointed ETR Manager

Orion H. Reed has been named manager of operations for Convair at the Eastern Test Range (ETR), replacing Ken E. Newton, now director of launch vehicle programs.



Orion Reed

Reed will direct all Convair operations at ETR, including checkout and launch of spacecraft and spacecraft boosters.

Reed joined General Dynamics in 1959 as an assistant test conductor and later was appointed launch conductor for ETR complexes 12 and 13. He was chief of launch operations for Convair from 1966 until his present assignment.

As such, he directed all test activities associated with the Atlas and Atlas-Centaur vehicles for missions including Gemini Target, Centaur R & D, Orbiting Astronomical Observatory, Orbiting Geophysical Observatory, Lunar Orbiter, Surveyor, Applications Technology Satellite, and Mariner Venus and Mars.

Reed attended Purdue University, School of Mechanical Engineering, and completed engineering extension studies at the University of Southern California and California Institute of Technology.

Daughter and Son Win Scholarships

Convair Vandenberg Management Association recently awarded $250 scholarships to two 1969 high school graduates.

They were Alice Louise Cota, daughter of Mr. and Mrs. Alexander Cota, and David A. Kreiss, son of Mr. and Mrs. David T. Kreiss. Both Cota and Kreiss are in Dept. 985-1.

Electronics Picnic Scheduled Aug. 16

Open to all Electronics-SD employes, the annual Management Club picnic will be held Saturday, Aug. 16, 2 to 6 p.m. at CRA Missile Park.

Admission will be 75 cents for adults and 25 cents for children.

Food will be served beginning at 3:30 with pizza, spaghetti with meatballs, salad, etc.

Games and other special events are planned.

Tickets are available from all club boosters. For additional information contact C. B. Bagaloff, ext. 1777 LF.

New Hours Schedule Established For Safety Cribs at Three Plants

Convair safety cribs are operating under new sets of hours, John Hopman, chief safety engineer, announced.

New hours are:

LF Plant (phone ext 2086)—Mon. 8:15-11:30 a.m. and 12:30-5 p.m.; Tues. 8:15-11:30 a.m. only; Wed. 8:15-11:30 a.m. and 12:30-5 p.m.; Thurs. 8:15-11:30 a.m. and 12:30-5 p.m.; Fri. 8:15-11:30 a.m. and 12:30-5 p.m.

KM Plant (phone ext. 1966)—Mon. 8:30-11:30 a.m. only; Tues. 12:30-5 p.m. only; Wed. 8:30-11:30 a.m. only; Thurs. 12:30-5 p.m. only; Fri. 8:30-11:30 a.m. only.

AF Plant 19 (phone ext. 1261)—Closed a.m. Mon.-Fri.; Open Mon.-Fri. 12:45-5 p.m.; Thurs. 12:45-3:15 p.m.

A special allotment of 500 factory discontinued brown or black slip-on oxfords will go on sale at safety cribs today (Aug. 6). Price is $9.25 ($4.25 savings).

Log Book Entries

Personals

CONVAIR

We would like to express our deep appreciation for the many cards of sympathy and floral spray for our son Ronald who was killed in Viet Nam.

Mr. and Mrs. Harold Morgan and family, Dept. 780.

* * *

The family of Joseph E. Nimesgern Sr. acknowledges with deep appreciation your kind expression of sympathy.

Mrs. Joseph E. Nimesgern Sr.
Mr. & Mrs. Joseph E. Nimesgern Jr.

* * *

Your sympathy and kindly thought will always be held in grateful remembrance.

Mrs. Clarence W. Thompson and family

* * *

I wish to express my thanks and appreciation to my many Convair friends for their gifts and cards during the illness and death of my mother.

June R. Wilkins, Dept. 142.

* * *

My grateful appreciation for the many helping hands and the warm expressions of sympathy upon the death of my husband Ed Staats.

Mrs. E. L. Staats

* * *

I wish to express my sincere gratitude to my many friends for their kind expressions of sympathy upon the death of my husband, Arthur.

Inex Schurr, CRA Club House

* * *

We would like to express our thanks to our friends for their thoughtfulness upon our recent bereavement.

Ralph B. Bailey and A. W. Bailey

* * *

The relatives of Morlie R. Brown gratefully acknowledge the extraordinary kindness and gestures of sympathy extended by friends at Convair to wife, Kelsie, son, Gordon, daughter, Debby Dinant and niece Polly Brown.

Rider-Driver

CONVAIR

RIDE WANTED—From Lomita Village to Plant 19, 7 a.m. to 3:30 p.m. shift. Call J. A. Brambila, ext. 2474 LF.

RIDE WANTED—From 64th and El Cajon Blvd. to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Don Armour, ext. 591 LF.

RIDE WANTED—From Clairemont Dr. (Community Center) to Plant 19, 7 a.m. to 3:30 p.m. shift. Call Norman Caetano, ext. 605 LF or (home) 273-3802.

RIDE WANTED—From 39th & Meade to LF plant, 8 a.m. to 4:45 p.m. shift. Call Kay Knoff, ext. 671 LF or (home) 282-2743.

Deaths

CONVAIR

ASHCRAFT—Leonard J., Dept. 833-2, died July 13.

BALDWIN — L. J., retired 11-30-67, Dept. 049, died July 11. Survived by his wife, Frances.

BOWKER—Chester F., retired 1-5-61, Dept. 31, died July 8. Survived by his wife, Etta.

BROWN—Morlie R., Dept. 027-0, died July 25; survivors include wife, Kelsie; a son and a daughter.

GEORGE—David W., Dept. 193-2, died July 9. Survived by his wife, Irene.

GOWDY—Robert D., Dept. 001-0, died July 3. Survivors include his wife, Mary and two daughters.

MIDULLO—Salvatore, Dept. 015-0, died July 21; survivors include a son, Thomas.

NIMESGERN—Joseph E. Sr., retired 12-8-62, Dept. 146, died July 1. Survivors include wife, Ruby Agnes and son Joseph Jr.

PRATHER—Robert L., Dept. 401-1, died July 14; survivors include wife, Vivian; three sons, Raymond, Arthur, and James; two daughters, Betty and Dolores.

SANTI — Bruno U., Dept. 049, died July 7. Survived by his wife, Viola.

SCHURR — Arthur W., retired Dec. 1963, died July 3. Survived by his wife Inez, Dept. 131-7.

SHIVERS—John W., Dept. 027-0, died July 20; survivors include wife, Laura, and a daughter, Mary.

STANEK—Ernest R., retired 12-29-66, Dept. 731, died July 1. Survived by wife, Rella.

VALIN—Betty A., Dept. 515-0, died July 27. Survivors include her husband Michael and mother, Marguerite Allen.

WOMACK—Loyd B., Dept. 001-0, died July 13; survivors include wife, Arline, two sons, and two daughters.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Service Emblems

CONVAIR

Service emblems due between August 1 and August 15.

Thirty-year: Dept. 016, W. J. Gibson; 027, R. W. Whited; 031, C. P. McVay; 130, Norma C. Buell; 400, F. D. Slavens, 401 H. S. Jensen.

Twenty-five-year: Dept. 106, W. W. Fox; 149, F. P. Hernandez Jr.; 195, J. E. Miller; 401, C. L. Lyons; 761, J. F. Mayer.

Twenty-year: Dept. 031, G. K. Phares; 149, J. Meza; 195, J. F. Crawford; 400, O. A. Wahlsten; 401, E. B. Peters; 566, A. F. Polus; 958, G. C. Eggen.

Fifteen-year: Dept. 113, J. T. Merritt Jr.; 513, V. J. Park Jr.; 595, Antoinette M. Sullivan; 780, Opal P. Nickell; 810, P. K. Noland; 979, J. E. Garrett.

Ten-year: Dept. 143, R. E. Morrill Jr.; 149, Virginia J. Samuelson; 170, T. W. Olson; 452, J. Schwartzberg; 532, J. J. Bushnell; 533, W. Wright; 572, F. J. Phillips; 733, J. R. Halfpenny; 831, Gladys Lewis; 954, J. A. Casto; 963, R. F. Maxa; 979, M. F. Ohlman; 985, W. L. Simonson; 986, Helen Navoy; 999, L. K. Dascenzo.

ELECTRONICS

Fifteen-year: Dept. 616, C. N. Bagaloff; 712, F. L. Letzring Jr.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending July 3.

Dept. 979, S. M. Benn, $15; 574, L. W. Blaylock, $34; 401, G. Buono, E. D. Cordle, $21 each (joint award); 566, W. W. Craft, $17.20; 027, J. G. DeLara Jr., $50.60 (three awards); 141, R. E. Doran, $265.70; 579, C. A. Dunkle, $25; 578, J. C. Easton, $123.70; 969, E. A. Ferguson, $15; 985, C. M. Flores, $15; 979, L. W. Gardenour, $25.10; 579, A. W. Hamrick, W. F. Lutes, $72.90 each (joint award); 962, R. E. Harper, $84.40.

Dept. 001, E. H. Hussong, $15; 533, G. M. Jackson, $15; 401, S. J. Jones, $73.70; 027, J. L. Killeaney, $247.40 (two awards); 454, H. L. Kirby, R. Peden, $11.55 each (joint award); 565, E. V. Mansfield, $25; 001, H. Mondy, $15; 979, L. R. Moore, C. Amedeo, $339.15 each, (joint award); 045, J. H. Morin, $54.40; 027, A. Nenashi, $23.20; 958, L. R. Nottebaum, $25.40; 031, W. E. Porter, $38.20; 031, V. H. Schade, $25.80; 031, H. O. Schroeder, $15; 979, E. W. Stewart, $27.10; 401, C. S. Vest, $217.50; 045, F. J. Vigliaturo, $15.

Employe Suggestion awards approved for the week ending July 11.

Dept. 027, A. R. Anderson, $15; 019, J. R. Becker, B. Wesson Jr., $19.20 each (joint award); 250, J. A. Bender, $15; 146, I. C. Brugger, $36; 250, H. J. DeLese, $67.40; 027, J. E. Dillard, H. M. Zeno, $7.50 each (joint award); 588, F. L. Dohm, $19.50; 143, M. V. Downing, $15; 553, W. M. Forys, $84.80; 250, B. D. Fortenberry, $15; 524, C. M. Gilliland, $30 (two awards); 130, P. J. Hardisty, $15; 015, S. S. Jenson, $15; 250, E. G. Johnson, $277.20; 142, L. E. Johnson, $15; 250, N. F. LaGamma, $121.30.

Dept. 015, R. V. Leonard $30 (two awards); 019, R. V. Lucero, $21.60; 979, B. E. Monfort, $68; 027, A. Nenashi, $105.40 (two awards); 143, M. Newnum, $94.40; 836, F. Newton, $29.50; 027, D. R. Noon, $30 (two awards); 049, W. C. Pahl, $15; 027, F. Patruno, $17; 143, R. R. Reekers, $34.80; 027, A. W. Sandsten, $27.80; 031, H. O. Schroeder, $40.40; 130, M. C. Soderstrom, $82.90; 733, H. Staten Jr., $15; 015, L. M. Therrien, $15; 574, C. W. Weber Jr., $15; 143, L. A. Weeks, $15; 140, E. W. Wright, $35.70.

Employe Suggestion awards approved for the week ending July 18.

Dept. 802, L. H. Barber, $15; 966, R. L. Batten, $15; 143, F. A. Baugh, $15.30; 508, G. J. Blumenthal, $3,400; 001, L. Boehlke, D. Demers, $7.50 each (joint award); 958, C. C. Campbell Jr., $75.40; 059, S. E. Cass, $71.20; 170, E. L. Curtis, $15; 141, R. E. Doran, $15; 524, C. M. Gilliland, $15; 144, F. R. Glick, $27.30; 401, R. A. Golem, $15; 840, M. Gonzales, $15; 572, L. Heyn, $401.30.

Dept. 401, F. B. Hull, $90.70; 780, G. D. Johnston, $15; 401, J. C. Lemings, $18.70; 507, R. H. Lewis, $15; 131, L. B. Melton, $15; 401, L. V. Millerd, $15; 059, G. Olcott, $70.40; 979, D. L. Olson, $25; 143, L. Ortiz, $374.60; 541, A. Sansone, $15; 979, L. Speigner, $15; 142, E. G. Sweet, $15; 584, W. M. Tsunoda, $15; 401, J. G. Vitalis, $15; 141, H. G. Warner, $28.20; 584, K. D. Whitehead, $15.

Employe Suggestion awards approved for the week ending July 25.

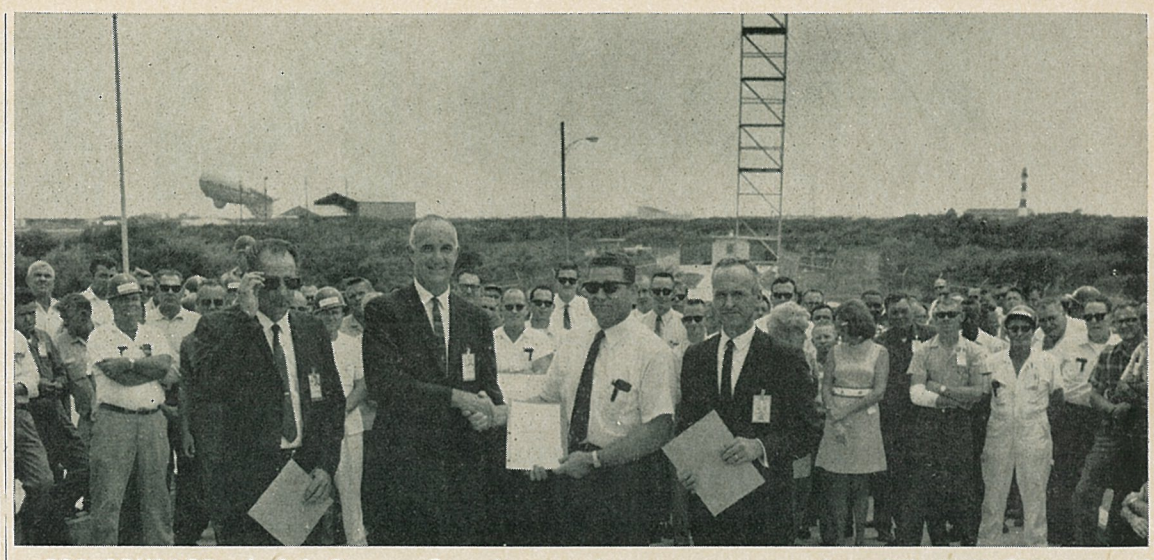
Dept. 149, E. Angulo, $147.60; 059, A. W. Bailey, $25; 143, F. A. Baugh, $32.20; 059, H. Baxter, R. Merritt, $18.80 each (joint award); 584, M. H. Blatt, $15; 733, N. Chaudoin, $20; 140, L. A. Denoyer, $15; 588, F. L. Dohm, $15; 836, C. D. Duncan, $15; 250, T. T. Fowler, $15; 142, R. D. Gehring, $25; 519, C. Greve Jr., $15; 979, J. A. Jones, $15; 574, K. R. Krebs, $93.90.

Dept. 015, M. E. Long, $18.90; 045, M. M. Lopez, $28.40; 526, P. E. Ludvigson, $36.60; 985, M. S. Miller, $33.40; 507, C. R. Olden, $320.30; 588, J. W. Richardson, $77.50; 524, H. H. Richter, $85.50; 059, J. M. Rivera, $670.40; 578, T. L. Stalcup, $110; 979, E. W. Stewart, $50; 170, M. M. Thorp, $15; 780, J. C. Walker, $17.60; 979, K. C. White, $25; 584, K. Whitehead, $15.

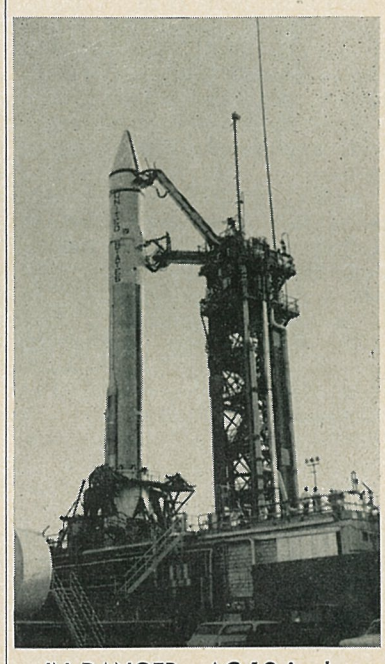
Births

CONVAIR

PRESTON—Daughter Bonnie Janette, 7 lbs. 14 oz., born July 10 to Charlotte and David Preston, Dept. 400-6.



FOR COURAGE—Jack L. Bowers, Convair general manager, congratulates Billy B. McClure, one of two launch service mechanics at ETR honored for quick action during launch preparation last February. The other, Charles J. Beverlin, was on vacation at time of ceremony. Looking on are Orion H. Reed, Convair, base manager at ETR, and Robert Gray, director, Unmanned Launch Operations, NASA.



IN DANGER—AC-19 is shown at Cape Kennedy during fuel testing.

Launch Mechanics' Quick Courage Recognized by Convair and NASA

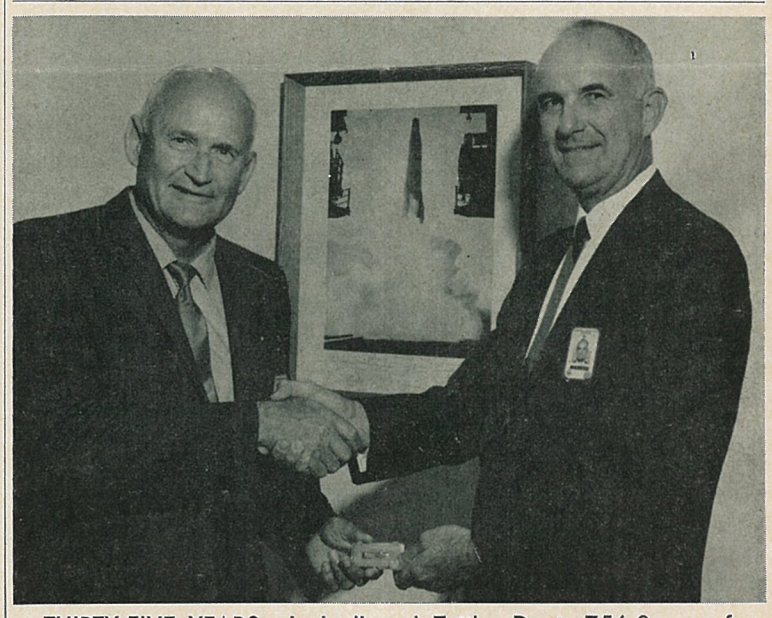
Quick and courageous action that saved the Atlas-Centaur 19 booster from great damage was recognized recently as NASA and Convair honored two Convair launch service mechanics at Cape Kennedy.

They are Billy B. McClure and Charles J. Beverlin who each received letters of commendation and $1,000 U.S. Savings Bonds, as well as a NASA-sponsored trip to the Jet Propulsion Laboratory at Pasadena to watch developments during the Mariner-Mars flyby.

AC-19, scheduled to launch Mariner 6 last February, was undergoing pre-flight propulsion system tests when a malfunctioning valve caused a serious drop in pressure. Acting instantly and at "considerable personal risk," the two men climbed part way up the launch tower and shut off valves, thereby avoiding a complete pressure loss.

(Because of the incident, another Atlas was substituted for the AC-19 launch, which proceeded successfully on schedule. The originally scheduled AC-19 booster, Atlas 5402C, was repaired and will be booster for the AC-18 launch of NASA's Application Technology Satellite-E.)

Both men were praised in letters from Oran W. Nicks, NASA deputy associate administrator for Space Science and Applications, for their "substantial contribution to the Mariner Mars '69 mission," adding that their actions were in the "highest traditions of professional competence and personal courage which have contributed so heavily to the success of the National Space Program."



THIRTY-FIVE YEARS—L. L. (Larry) Tuttle, Dept. 756-0 manufacturing development engineer, recently received 35-year emblem from General Manager Jack L. Bowers. At one time he was superintendent over final assembly and checkout for Atlas missile and later was manufacturing operations manager for Space Launch Vehicles.

Reserve Officers Courses Offered

General Dynamics employes who hold commissions in any branch of the armed services have been invited to enroll in evening courses being offered by Naval Reserve Officers School 11-2 beginning the second week in September.

Courses scheduled will be on navigation, seamanship, operations, leadership, Navy personnel administration, administration of education and training, public affairs, security of classified information, oceanography, elementary principles of digital data systems, and anti-submarine warfare.

Also, space technology, NBC (nuclear, biological, and chemical) warfare, national security management, orientation to command, command at sea, amphibious operations, naval intelligence, national strategy, and counter-insurgency.

Details can be obtained from educational services offices or by calling YN2 Maurice G. Goodman, 225-5114, weekdays between 7:45 a.m. and 3:45 p.m.

★ ★ ★

Navy Reserve Unit Seeking Members

The U. S. Naval Research Company 11-5 is recruiting members.

The group is composed of Naval Reserve officers interested in relating professional interests in fields such as engineering, mathematics and physical and social sciences to developments in the Navy.

Members of the unit have priority for training duty at ONR seminars and for on the job training at Navy Scientific Laboratories. For information call Thomas J. DeLacy, ext. 1719 KM.

YORK TAKES PART IN SCOUT TRAINING

Neal D. York, Convair Dept. 954-2, recently participated in a Boy Scouts of America training program at Philmont Scout Ranch and Explorer Base, Cimarron, N. M. York serves as district commissioner in the San Diego Council, BSA.

Wax Casting

Idea Derived From Hobby Applied To Tunnel Model, Earns $3,400

(Continued from Page 1)

part need be machined only once to get a casting master from which a master mold is made. Wax masters are then produced in this original mold. Next, the wax is encased in a plaster molding material which is heated and the wax poured out—hence "lost-wax."

These new plaster molds are then put in a centrifugal, or vacuum, casting machine and molten metal forced into them. When the newly cast metal has hardened — by watering, or "quenching"—the plaster is carefully broken away leaving the part.

The Blumenthal method cost is less than $300.

It was found that to faithfully reproduce the mass and density properties of the original launchers, 22-karat gold, alloyed with 8 per cent silver to reduce softness, would be required (GD/NEWS June 11, 1969).

Using the gold is not as expensive as it sounds. There is only approximately $120 worth of gold in each launcher—80 per cent of which is recoverable when the gold is resold after tests.

ROCKHOUND PICNIC SET FOR AUG. 17

CRA Rockhounds have slated their annual picnic for Aug. 17 at Missile Park beginning at 10 a.m. Punch, coffee and games will be provided. Train rides will be offered at reduced prices.

CALCULATOR SALE SET FOR AUG. 16

Convair Salvage Yard has more than 25 rotary calculators set for sale Aug. 16. The calculators will be priced from $50-150. Store opens from 8-12 a.m.

Roger Lewis Discusses 'Military-Industrial Complex' in Interview

(The following interview with Roger Lewis, General Dynamics president, conducted by Martin Skala, appeared in the July 11, 1969, issue of The Christian Science Monitor. One of a series dealing with the "military-industrial complex," it is reprinted by permission.)

Is there really such a combination of interests as the so-called "military-industrial complex?"

Yes, there is something that can be called a "military-industrial complex." And I am using the word "complex" in the same sense that President Eisenhower used it in his 1961 farewell talk.

What seems to have been forgotten about President Eisenhower's statement back in 1961 is his reference to the fact that "we can no longer risk emergency improvisation of national defense" and have, therefore, "been compelled to create a permanent armaments industry of vast proportions."

A little later, after referring to the "conjunction of an immense military establishment and a large arms industry . . .," he went on to say that "we recognize the imperative need for the development." He was not criticizing its existence — he was cautioning against "the acquisition of unwarranted influence . . . by the military-industrial complex."

Of course, there is always an underlying implication that there is some kind of "improper" relationship between the military and industry. That's really what causes the question to be asked. But any analogy between this country and prewar Germany or Japan simply won't stand up. We do not have a strongly centralized government as they did and, further, there are some 40,000 companies doing defense work.

In addition to this, there are the numerous echelons of authority both within the executive branch and within the Congress that must study and approve procurement policies and actions.

And lastly, the whole procurement operation is done through a free-enterprise system. The competition is more severe, the risks are usually greater, and the profits are lower in the defense business than in commercial practice.

Remember that although the government is a customer, it's also a shopper, and it's determined to get the best product for the least money in the shortest period of time. Both our democratic system of government with all of its checks and balances and the highly competitive free-enterprise system of American business ensure the best and most productive relationship between the military and industry.

★ ★ ★

Have you seen any evidence that the American political system is being subtly altered by large-scale defense spending?

I have seen no such evidence. But it's a good question to raise, because world conditions being what they are defense gets the most money and the most attention and publicity. This is so because it has the biggest and most important job to do.

America has a history and tradition of concern that the military not be dominant in our political life, and it was with this in mind that our founding fathers separated the powers of the government, provided for civilian control of the military, and ensured freedom of speech and freedom of the press.

It is this very climate within which the free-enterprise system can operate so effectively and contribute so greatly to the preservation of the kind of government we have.

★ ★ ★

Do you believe, as some critics have alleged, that the large defense-oriented corporations have a "vested stake" in perpetuation of the cold war?"

No, I do not believe that defense-oriented organizations like General Dynamics have a vested stake in the perpetuation of the cold war. And even if they did have such an interest, the considerations set out in the answer to the first question would prevent this. The Department of Defense devises national strategy and sets requirements. Industry only responds to these requirements.

Consider, too, the number of defense businesses in existence during and after World War II and how many fewer there are today. The situation is very fluid, with businesses coming into the defense area, shifting over to nondefense business, and even going out of business entirely. The record is pretty clear in this respect.

The executive branch determines policy, defense devises the strategy, Congress provides the money, and industry does its job in a tough, competitive atmosphere.

★ ★ ★

One prominent economist has suggested the managerial system is being gradually altered because of stringent Pentagon controls over defense spending. Such as the contractual inclusion of "buy America" clauses, wage and overtime guidelines, etc. Is there any validity to this contention?

No, I don't think there is any such alteration. In my opinion, defense contracts are no different from nondefense companies. Both have the same responsibilities to their shareholders, employees, and customers.

However, defense money is public money, and large amounts are involved. The Defense Department is accountable by law and regulation to the President and the Congress and is subject to their constant inquiry. Because the Defense Department is not a customer in the ordinary sense, adequate control and safeguards over its expenditures are certainly in order.

The need is to achieve a balance between the government's requirement as a special customer and sovereign, and management's fundamental need to "run its business" to meet its contractual commitments in its and the government's interest. This is a constant problem, and both sides need to be alert to rules and regulations that could shackle management and prevent timely and wise decisionmaking. There is a great deal which can be done in this area, and the people in charge in the Pentagon are aware of the problem and are struggling manfully with it.

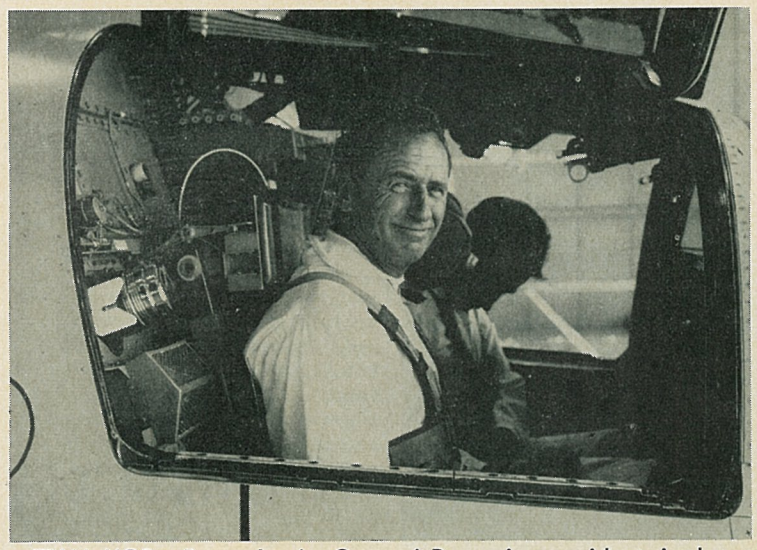
A point to remember is that even those defense contractors who do most of their business with the government don't lose their autonomy, individuality, independence, or—most importantly —their responsibility to perform just because the government is the customer. In the last analysis, the so-called management limitations of the Department of Defense are only very tight reporting systems.

★ ★ ★

How much of a problem is government red tape?

It depends on the kind of "red tape."

No one questions the Defense Department's need for reports to provide visibility as to the status of performance, expenditures, small business participation, and the like. We understand the need and can adjust to it. But reports that serve no useful purpose, including redundant reports, need to be eliminated, and we find the Defense Department receptive to suggestions for doing away with them.



TRIAL HOP—Roger Lewis, General Dynamics president, is shown in cockpit of F-111.

On the other hand, "red tape" which delays decisionmaking by requiring unnecessary approvals of higher authority or a series of such approvals for matters which should be settled at the contracting level does interfere with the timely and proper performance of contract. To this extent it is a problem.

★ ★ ★

Why do you think there is so much talk about a "military-industrial" complex?

First, I think the Eisenhower statement has a great deal to do with the wide discussion of a military-industrial complex today.

Second, there is a great deal of money involved — public money — which is spent to satisfy man's most basic interests, his personal safety and his country's security.

Third, our history and tradition of civilian control of our government, coupled with the people's realization that other countries have suffered from military-industrial relationships, underlies much of this discussion.

Also, the recollection of the wars of the last 100 years and strong feelings about the conflict in Vietnam contribute to it.

And, lastly, the current controversy over the Safeguard antiballistic missile system provides the trigger for a higher-pitched dialogue on this subject.

All of this public interest, however, is healthy and is to be welcomed. It's a part of our system.

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Based upon your experience in industry, are present Pentagon and congressional controls over military procurement practices adequate to prevent waste or malfeasance?

This is really a question of extent and degree. Big defense programs, just like big private business operations, have the built-in problems of size, complexity, and the fact that people are involved. Controls over military procurement are an old story to the Department of Defense and are founded on vast experience. There is a well-established watchdog relationship involved here and any great deviation from sound procurement practices is virtually impossible.

Also, a reading of the daily press, and certainly a reading of the Congressional Record, gives clear proof that waste and malfeasance are matters under constant scrutiny by the Pentagon, the Congress, the General Accounting Office, and other agencies. I think, too, that any further needed laws or regulations can be insured both by this scrutiny and by the publicity which is always given waste and malfeasance by an inquisitive and remarkably well-informed press.

★ ★ ★

Should the American people be concerned by the large numbers of ex-high-ranking military officers employed by major defense contractors?

I do not believe so, at least if other companies handle the matter as we do at General Dynamics. We have very few high-ranking military people in terms of our total payroll. We are very careful not to hire a military officer unless he has some special technical or organizational skill which we can use in the company in a way which will avoid any possibility of conflict of interest.

We apply the same criteria in selecting such men as we apply to those we hire from industry or in selecting men for promotion within the company.

On the other hand, I believe it is very important that we have the benefit of the specialized knowledge and experience of certain of these men. It is a question of management — how you use the talent and experience of these exceptionally well-qualified people.

I think that the defense industry would be properly criticized if it didn't use the talents of these trained and competent people. I think, further, it would be unfair to deny a man a job just because he had a military background. This really comes down to a question of proper management.

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What percentage of General Dynamics' gross income comes from defense related or government contracting? What programs are involved?

Over the past seven or eight years about 80 per cent of our total sales have been to the Department of Defense or NASA and 20 per cent to commercial customers. We are primarily designers and developers of large weapons systems, such as combat aircraft, nuclear submarines, surface ships, and strategic and tactical missiles. We also build a variety of communications and data handling equipment for all three services.

We are proud of the fact that our company has played a significant role in the development of the first American satellite, the first supersonic bombers, the first nuclear submarines, and the first intercontinental ballistic missiles to be developed in this or any other country.

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Are the profits being made by defense contractors way out of line with comparable profits being made by civilian nondefense firms as some critics have alleged?

Yes, profits are out of line.

Recently, an independent study was produced for the Department of Defense by the Logistics Management Institute (LMI). The study took 18 months and was based on financial data from 65 defense contractors. The subject is so important — and so misunderstood — that I wish I had the space to cover it completely.

A summarization of the LMI Review states: "Despite policy objectives of the procurement system, defense-industry profitability has been in a steady decline. This is not supposition or argument. It is fact."

From 1958 to 1966 defense business profit declined while commercial business profit increased. The summarization points out: "By 1966, net profit after taxes on total capital investment was 6.9 per cent for defense business, 10.8 per cent for defense contractors' commercial business, and 12.4 per cent for a representative group of nondefense companies."

It's interesting to note that a $1,000 investment in 1957 in a group of mixed companies would have been worth $4,674 at the end of 1966, while the same investment in the primary defense group would have grown only to $2,265. This same trend has continued in 1967 and 1968, and I see no evidence on the horizon that it's going to change for the better.

This is an unhealthy and potentially dangerous situation. Industry must keep pace with the rapid advances in modern technology, but the cost of maintaining and modernizing plants and acquiring machine tools and other facilities is steadily going up while profits are just as steadily declining.

At some point declining profits and rising prices must result in obsolescence. Obsolescence means deterioration of our mobilization base and, should need for accelerated production arise, greater costs for weapons systems and a slower production rate.

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Allegations persist that General Dynamics in part won the F-111 contract because of political factors. What is the truth?

There were no political factors in the award of the F-111 contract. Actually the story is a simple one. Both the Boeing and General Dynamics proposals were reviewed by an evaluation group in the Pentagon. This consisted of 284 military and civilian experts. The final score in this contest was General Dynamics 175.6 and Boeing 172.1. Then the military source selection board took these two scores and attached appropriate weight to the various elements in order to give more emphasis to those of greater importance. After this second review, General Dynamics was again the winner, 662.4 to 654.2.

The board recommended the Boeing design but Secretary McNamara chose General Dynamics. The whole story of this is told on Pages 1911 and 1912 of the TFX contract investigation hearings. It was a close fight and a hard decision, but General Dynamics did win and won on the basis of the better design. I think a better airplane resulted from this tough competition.

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What is the future of a heavily defense-oriented corporation like General Dynamics?

No precise predictions can be made about the future of General Dynamics or other companies heavily engaged in defense business. However, there are a number of points that can be made that might be helpful in establishing a framework for thinking about the future of defense-oriented companies.

First, I think that even if events should permit a smaller defense establishment than we have today, the need for excellence in our hardware and the need for keeping not merely abreast but ahead of the rest of the world would still be matters of great importance.

The country must always be in a position to adapt itself to a sudden change in the world climate, must have the capability for rapid buildup, the ability to translate its scientific and industrial base into the best hardware in the shortest time.

It's hard for me to visualize a time in the future when it will be possible for the United States to be without an industry capable of producing weapons systems — very likely systems more complex than we have today. I think it's a real possibility that the industry could be — and some say should be — thinned down as the years go on to a fewer number of companies with the largest part of their effort directed to weapons development and production. But there will always be a proper place in the national-defense picture for capable, efficient, and rather specialized companies.

If circumstances do not permit smaller military forces in the future and, therefore, a small volume of defense production, this would mean to me only an even more competitive atmosphere in which General Dynamics would work even harder to maintain a high-win rate in defense contracts.



1,000 PER CENT—Fred Lee Jr., left, manager of Kearny Mesa plant reliability control, displays Cost Reduction Trophy he received from L. I. (Russ) Medlock, right, director of reliability control. Award was for performance of Lee's Dept. 141 and Dept. 143 in exceeding cost reduction goal by more than 1,000 per cent. Combined quarterly total goal was $32,500 and they achieved $341,580. Lee also won trophy for first quarter.



VALUE CONTROL AWARD—Convair's George Trimlett, chief of mechanical design, accepts quarterly Research and Engineering Value Control Award from F. D. Applegate, director of product design. Trimlett's Dept. 532 saved more than $728,000 through VC proposals during second quarter. Receiving certificates of individual commendation were (behind from left): P. A. Nagy, Dept. 533-0; F. Schnaubelt, Dept. 531-2; R. Ochonsky, Dept. 532-1; J. Rittweger, J. Phipps, and G. Spanovich, Dept. 531-2.

Dependent Insurance Signup Without Physical Ends Aug. 30

All eligible Convair hourly employes not currently participating in the dependent medical insurance program may sign up for this coverage during August without their dependents taking a physical examination. The exemption from physicals ends Aug. 30.

Convair and the International Association of Machinists, the Engineers and Architects Association, the United Plant Guard Workers of America, the International Brotherhood of Electricians and the International Alliance of Theatrical Stage Employes have agreed that all hourly employes represented by these bargaining units are eligible, in addition to all of the non-represented hourly employes.

Employes who take advantage of this "no-physical" sign up period must pay the employe portion of the premium, through payroll deduction, until the elimination of the premium is effective.

Elimination of the employe contribution toward dependent medical coverage for these employes is effective during the fourth quarter of 1970 or the second quarter of 1971.

All other eligibility provisions remain in effect, such as preexisting illness which may be covered by the basic medical plan but not by the major medical plan.

Employes may sign up at any industrial relations-employe benefits location. For information call ext. 3363 KM.

Florence Chadwick To Address Wives

Convair Wives Club will hear English Channel swimmer Florence Chadwick on "Keeping Fit" at an Aug. 20 meeting in Sands Hotel.

Reservations must be in by 5 p.m. Aug. 18 to either Doris Browning, 295-5369, or Anita Klepach, 264-1013.

Powered Equipment Classes Scheduled

New licensing procedures recently were put in effect by Convair safety office for in-plant powered equipment operators, according to Dick Schulz, Sr. safety engineer.

Under the new program all employes who are required to operate gasoline or electric powered equipment such as lift trucks, must attend a series of safety and driver proficiency classes. Following orientation classes each operator will be required to pass a safety and proficiency test. He will then receive an in-plant operator permit indicating specific equipment which the employe is authorized to operate.

Bujkovsky to Head Microfilm Chapter

Three General Dynamics employes are slated to become officers of the newly formed San Diego chapter of the National Microfilm Association.

They are G. J. Bujkovsky, Convair, president; Paul Ressler, Stromberg DatagraphiX, Inc., 2nd vice president and Ron McClure, DatagraphiX, executive committee.

The chapter was formed by a steering committee which included McClure, Bujkovsky, and Keith G. Blair, head of library and information services at Convair.

The officers will be installed at the next meeting, 6:30 p.m. Aug. 11 at the Catamaran Hotel.

'Safe' Clothing For Summer Advocates

John P. Hopman, Convair chief safety engineer, has urged all employes to avoid exposing themselves to possible injuries by wearing improper clothes and shoes.

Hopman said that during the summer months many employes wear clothing which may be more comfortable but may also be more dangerous.

Loose clothing is unsafe, he said. Full coverage shoes must be worn in all shop and laboratory areas. An open-toed shoe with less than one-half of the toe area exposed may be worn in an office area. Any other type shoe is considered unsafe.

Fire Fighters Assist Emergency Landing

Convair division fire fighting units provided assistance to a crippled airplane during an emergency landing at San Diego's Lindbergh Field July 24.

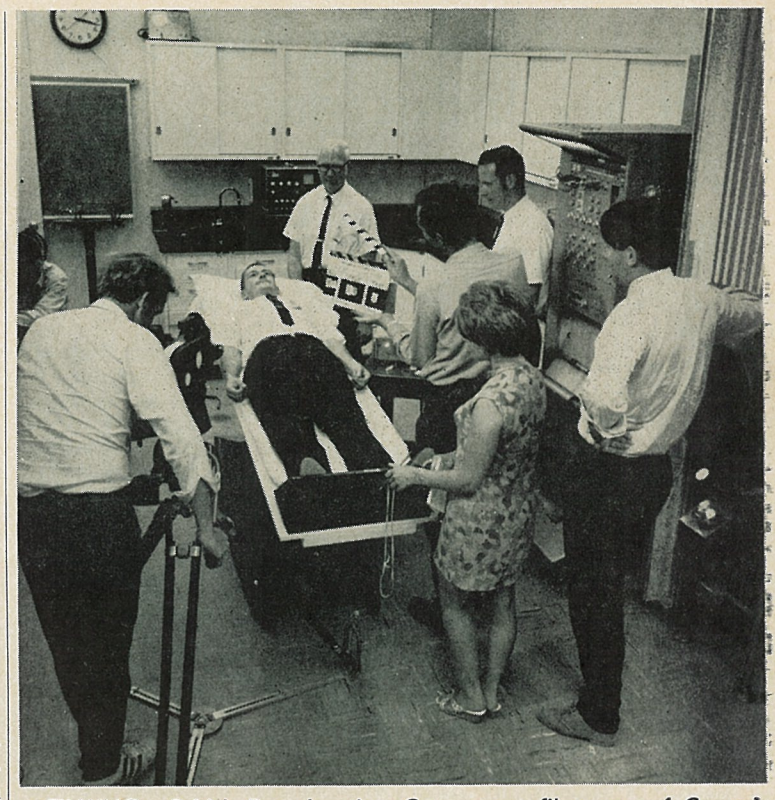
The plane, a twin-engine Beechcraft owned by Ryan Aeronautical Co., was unable to lower its left landing gear upon approach to the field.

Crash trucks led by Convair Fire Capt. Clarence E. Miller laid a 600-foot protective foam strip on the runway. The plane touched down, skidded and spun to a stop. Passengers exited safely.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



BEST RECORD—Orion H. Reed, third right, Convair ETR base operations manager, accepts 1968 Off-Site Safety Trophy from Les King, center safety engineer. Trophy is given to off-site base with best record of serious medical cases in proportion to number of hours worked. From left are Bob Beasley, Gene Gilmore, Tom Chitty, King, Reed, Dan Sarokon and Jay Freeman.



FILMING—British Broadcasting Corp. crew films use of Convair field effects monitor in life sciences lab at Kearny Mesa plant as W. G. Thomson, Dept. 592-0, serves as "patient." S. O. Atwood, Dept. 595-0 is behind Thomson and D. W. Vorbeck, Dept. 592-0, is second from right.

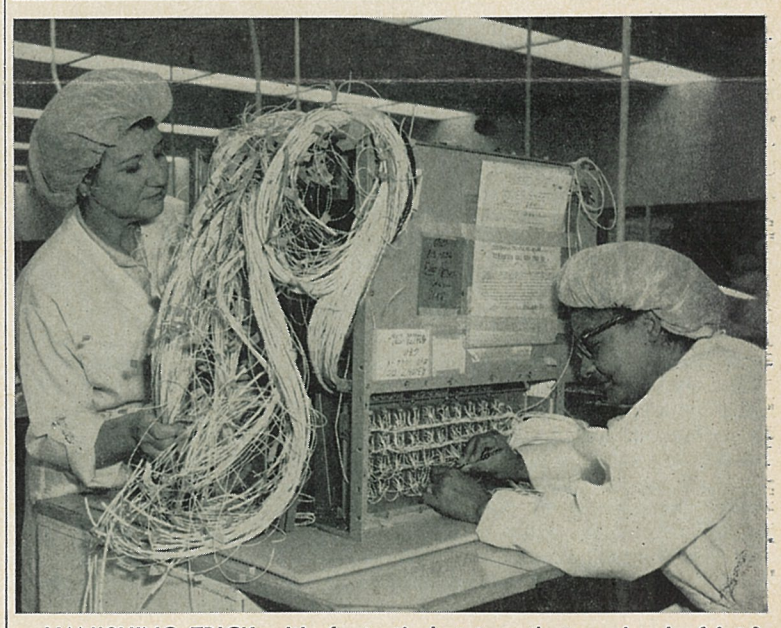
BBC Team Visits Convair To Film Scenes For TV Show

Two Convair technological developments—the ocean data station and the field effects monitor—were filmed recently for a British Broadcasting Co. (BBC) television documentary program, "Tomorrow's World."

Bravo, one of the ocean data stations developed by Convair for the Office of Naval Research, was filmed after its return from 10 months in the North Pacific where it had been used for gathering oceanographic and meteorological data.

The field effects monitor can be used to monitor respiration and heart rates of an individual without physical contact.

"Tomorrow's World" is the British equivalent of CBS's "21st Century" in the U.S. Peter Bruce, a BBC producer, was in San Diego for filming of the program segments at Convair.



VANISHING TRICK—It's fantastic but true that armload of intricate wiring eventually will fit snugly inside the 6811 AGERD (Aerospace Ground Equipment Requirements Data) unit for use in F-111 ground support system. Handling wiring task is Evelyn Wallace, left, and Alphretta Sherrill, both of Convair's Dept. 780-6. Convair is building AGERD units under subcontract from Fort Worth and Electronics divisions.

Grants of $4,500 OKd By Con-Trib-Club

Grants totaling $4,500 were approved during July by the Convair Employes' Con-Trib-Club.

Grants of $1,000 each went to the United Jewish Federation, the National Cystic Fibrosis Research Foundation and the San Diego Mental Health Association. The National Multiple Sclerosis Society received $1,500.

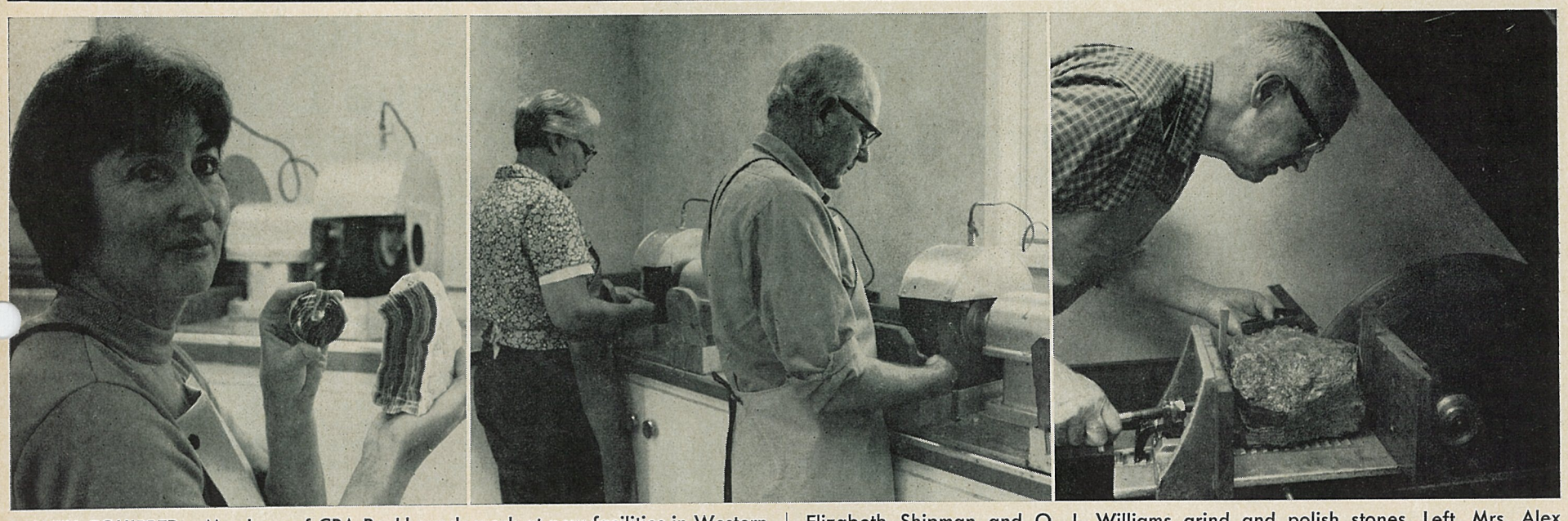
The grant to the Mental Health Association was for general operating expenses while the other grants were toward the 1969 fund raising campaigns.

Marine Son Earns Bronze Star Medal

Marine Cpl. William G. Hardy, son of Warren G. Hardy, Convair Dept. 598-1, has been awarded the Bronze Star medal with Combat "V" for meritorious actions while serving as a rifleman with the 1st Marine Division in South Viet Nam.



RIDER-DRIVER — Dorothy Corrao, industrial relations, Bldg. 4 at Air Force Plant 19, shows new rider-driver master list now in use for employes there. Persons wishing rides or offering rides may fill out cards with Dorothy at their convenience.



WELL EQUIPPED—Members of CRA Rockhounds work at new facilities in Western Town adjacent to Missile Park at Kearny Mesa. At right, G. G. Shipman, instructor for Wednesday morning classes, checks cut on piece of travertine. Center, Mrs. Elizabeth Shipman and O. J. Williams grind and polish stones. Left, Mrs. Alex (Blanche) Leondis, shows cabinet knob she made from rock similar to one she is holding.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Aug. 12. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Aug. 9, 25 mile Mission Bay ride. Meet at Hilton Inn, 9 a.m. Aug. 23, 50 mile San Diego Bay ride.

BONAIR FLYERS—Meeting Aug. 7, 7:30 p.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting Aug. 17, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet 9 a.m.-noon and 7-10 p.m. Tuesdays and Thursdays.

CHORUS—Rehearsals Wednesdays, 7:30 p.m.

COINEERS—Meeting Aug. 11, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet each Thursday, 7:30 p.m. CRA Missile Park picnic shelter.

DELTA DIVERS—Basic skin diving course to begin Aug. 11, 7:30 p.m. Regular meeting Aug. 13, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m. YWCA, 10th & C Sts.

FISHING CLUB—Aug. 19. Potluck 6:30 p.m., meeting 7:30 p.m., Gillespie Field Clubhouse.

GARDEN CLUB—Meeting tonight (Aug. 6), 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Torrey Pines tournament, Aug. 30-31.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting Aug. 12, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:30-8 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1 (includes skates).

JUNIOR SCIENCE — Workshop Aug. 15, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot 9:15 a.m., training class 10:30 a.m., Aug. 10, Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Aug. 7, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting Aug. 13, 7:30 p.m.

RIFLE CLUB—Senior shoot Aug. 13, 7 p.m. Junior shoot Aug. 16, 9 a.m. Gillespie Field Range.

ROCKHOUNDS—Meeting Aug. 13, 7:30 p.m. Picnic Aug. 17, 10 a.m., CRA Missile Park.

SCULPTURE—Workshop sessions each Monday, 7:30-10:30 p.m.

SPORTS CAR CLUB—Meeting Aug. 13, 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB — Meeting Aug. 14, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3475 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, meet Thursdays, 5:30 p.m.

TOASTMISTRESS—Meeting Aug. 19, 7 p.m.

TROPICAL FISH—Meeting and workshop, Aug. 18, 7:30 p.m.

WIVES CLUB—Luncheon meeting, Aug. 20. Potluck and craft session, Aug. 27, 10 a.m.

WOMEN'S GOLF—River Valley tournament, Aug. 9, 9 a.m.

Cakes, Cornbread Win Fair Ribbons

Cakes, cornbread and chocolate fudge proved a winning culinary combination at the recent Southern California Exposition at Del Mar for a Convair daughter.

Kathleen Needles, 19, daughter of Convair's Gordon J. Needles, Dept. 059-5, came away with three first and one third place ribbon in the home economics division.

Brochure Outlines CRA Travel Offers

Brochures covering the new CRA 69-70 Group Travel Program are now available at all CRA and employe benefits outlets. The program includes group travel to Europe, Hawaii, Mexico, the Orient, South Pacific and Australia, and around-the-world.

Two Thousand Attend Picnic

More than 2,000 attended the Convair Management Club picnic-ball game last month which was climaxed by the San Diego Padres' win over the Atlanta Braves.

The picnic was at the CRA Missile Park.

Raffle winners were: John Swigart, golf clubs; Mary Ann Feeler, home bar; Gerhardt Gross, 30-06 rifle; Bill Eaton, trip for two to San Francisco; Doraine Offerman, portable TV set; Helen Rinaldi, vacation for two in Los Vegas; Jim Shott, two Charger season tickets; Phyllis Walsh, indoor rotisserie; Bertha Frazier, deluxe barbecue and Jess Cook, Polaroid camera.

Picard and Sutton Win In Expert Shooting

Shooters Ralph Picard and Dick Sutton posted scores of 275-6x and 273-3x respectively to walk away with Expert class honors in CRA Pistol Club's July 13 match.

Other results: Masters — Don O'Brien, 289-12x; Harry Black, 286-6x; Center Fire — Black, 281; O'Brien, 277; Warren Walker, 258; Sutton, 257; Sharpshooter—James Thomas, 213-1x; Veronica O'Brien, 211-1x.

Next scheduled match and training class are Aug. 10 at Police Pistol Range. Match is at 9:15 with training at 10:30 a.m.

* * *

Results of July 27 pistol matches were: Masters—O'Brien, 289-5x; Warren Walker, 280-6x; Expert—Bill Worthington, 284-4x; Charles Kropp, 283-8x; Short National Center Fire — Walker, 278; O'Brien, 276; Jim Halfacre, 273; Kropp, 270; Sharpshooter—James Thomas, 225; Veronica O'Brien, 216.

Coineers to View Surveyor I Film

Convair Coineers will show "One, One, Zero, Zero," a 25-minute film on the two-day journey to the moon of Surveyor I at their monthly meeting, 7:30 p.m. Aug. 11, at CRA Clubhouse.

The theme of the month will be the 200th Anniversary and members have been asked to bring exhibits. There will be door prizes (five silver dollars), a give away coin (1960 "D" cent) and a drawing (18 silver dollars). For information call Joan Noga, ext. 3777 KM or 2663 KM.

Anglers Schedule Surf Fishing, Picnic

CRA Fishing Club will hold a surf fishing and picnic outing at Torrey Pines State Park Aug. 9 at 3 p.m. Punch and cups will be provided by the club. Members are asked to bring their own firewood.

Bob Browning, club commissioner, reports a successful Pinecrest outing July 12. Bluegill were taken during a sidetrip to Cuyamaca Lake.

'Moon Rockhounds' Hailed by CRA Club

Hailing them as "fellow rockhounds," CRA Rockhounds Club has sent club shoulder patches to Astronauts Neil Armstrong, Edwin Aldrin and Michael Collins.

Roy A. Haubert, Dept. 553-2, writing on behalf of the club, commented on the "extended weekend" field trip. The club received a "thank you" letter from the astronauts.

Free Skin Diving Course Scheduled

CRA Delta Divers will offer a free course in basic skin diving for employes and families beginning at 7:30 p.m. Aug. 11 at CRA Clubhouse.

The course will consist of classroom sessions to cover water and diving safety, equipment and the ocean; two pool sessions to gain familarity with diving gear and its uses and two ocean sessions.

Students must be over 14 and able to swim. They should have their own mask, fins and snorkel. For information call Loren Batchman, ext. 3012 KM or 284-8252 or Jim McGinnis, ext. 3746 KM or 279-7900.

Shrimp Boil Planned By Electronics-SD

Electronics-SD Fishing Club's annual shrimp boil will be Saturday (Aug. 8) at 7 p.m. in CRA Missile Park picnic shelter. Tickets are available from club officers.

New officers elected at June 27 meeting are: Danny Danenhower, president; Dalton Davis, vice president; Donna Galvin, secretary; Ray McIntyre, treasurer; Thyrsty Field, commissioner.

Two Rides Planned For Bicycle Club

The CRA Bicycle Club will take a 25-mile ride around Mission Bay beginning at 9 a.m. Aug. 9 at the Hilton Inn. Ride leader will be Myke Dickey.

On Aug. 23 the club will go on a 50-mile ride around San Diego Bay. Ride leader will be Cy Campbell.

Sports Car Club To View Dragster

CRA Sports Car Club will view a $6,500 fuel dragster at their 7:30 p.m. Aug. 13 meeting at CRA Missile Park picnic shelter.

The dragster, of the Unblown Single "A" Junior class, has a performance record of 196.58 mph in 7.72 seconds over a one-quarter-mile course.

Bob Spellman and Ted Thurber, the car's owners, will discuss construction, engineering, and mechanical features.

Films taken at Carlsbad Raceway July 27 of NHRA Tops Point races are also slated.

For additional information contact Ted Anderson, LF ext. 2464.

Linkswomen Play Whispering Palms

Jeannine Letzring (69 net) and May Dean Schell (72 net) won Flight A of GD Women's Golf Club's July 12 tournament at Whispering Palms CC.

Betty Jackson (72 net) and Rose Hubler (75 net) won Flight B.

Next tourney will be Saturday (Aug. 9) at River Valley course with a tee time of 9 a.m. For further information contact Freda Magargal, ext. 2933 KM.

CERAMICS CLUB'S TIMES EXPANDED

CRA Ceramics Club facilities in future will be open 9 a.m. to noon Tuesdays and Thursdays (for the benefit of family members) as well as 7 to 10 p.m. the same days.

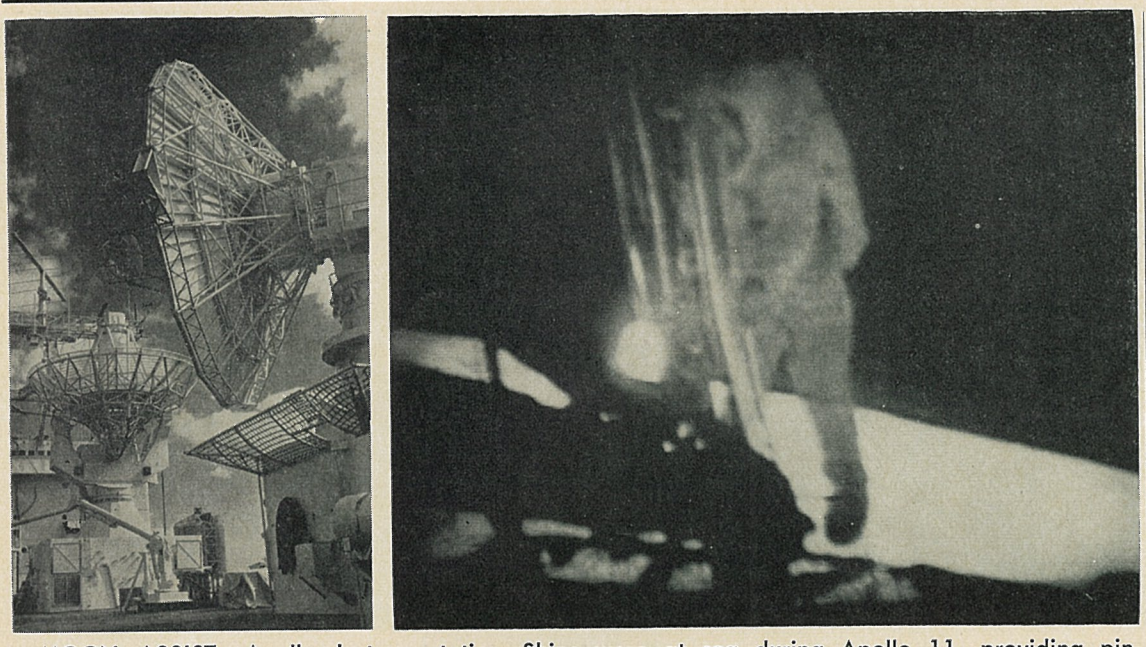
Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Aug. 16. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



DRAW, SIT AND RIDE—That's what guests at recent Management Club picnic-ball game are doing, drawing raffle tickets, waiting for results and riding trains. Left, Chuck Simmons emcees raffle while San Diego Padres announcing team of Frank Sims, Duke Snider and Jerry Gross helps out by drawing winning numbers. Larry Harrison pitches in by turning drum. Crowd at center watches raffle but kids of all ages at right prefer train ride.



MOON ASSIST—Apollo Instrumentation Ships were at sea during Apollo 11, providing pinpoint communications. At left is one of huge antennas used in sending spacecraft into trajectory. Photo at right was taken by Mike Thatcher, Fort Worth division inspector, using professional studio camera aimed four feet from his home television set, one second at 4.5 f.

Apollo Instrumentation Ships Head List of GD's Support to Moon Trip

General Dynamics had its own reasons to be proud of the success of Apollo 11, for a substantial number of its divisions/subsidiaries contributed to an important degree to support of the venture from liftoff to splashdown.

Deeply involved were Electronics division, Quincy, Electric Boat, Convair, Pomona and Stromberg-Carlson.

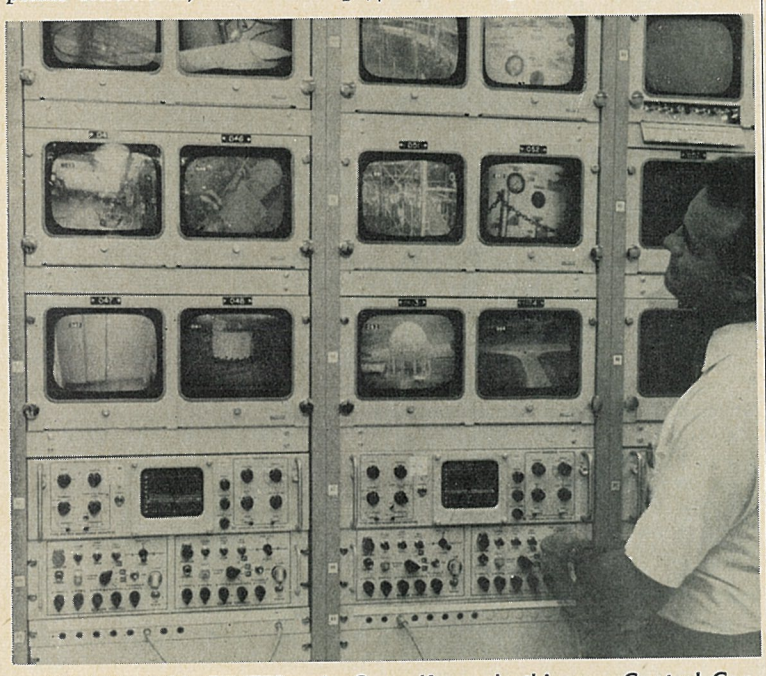
Of the support tasks the largest and most spectacular involved the three Apollo Instrumentation Ships, Vanguard, Redstone and Mercury. During the moon trip they were stationed in the Indian, Pacific and Atlantic oceans as floating tracking and communications stations, supplementing shore stations to form a network that maintained monitoring regardless of the position of the spacecraft in relation to the earth.

With Electronics division as prime contractor, the three ships, former Navy tankers, underwent extensive enlargement and refit at Quincy shipyard and were equipped with complicated and sophisticated electronics systems. Electronics, along with Electric Boat, supplied nine of the 12 major systems installed in the ships, with Convair and Stromberg-Carlson also contributing heavily. The latter's equipment aboard the ships included telephone switchboards, dial phone systems, and interphone systems that also provided surface-to-air radio communications.

Once headed for the scrap pile six years ago, Vanguard, Redstone and Mercury were saved by assignment to the Apollo project that has opened up new careers for them. At Quincy shipyard the ships were lengthened by 72 feet and broadened by seven feet to make room for some 450 tons of electronic gear.

Following sea trials and extensive checkout of equipment they were on station for the entire Apollo 11 period with excellent performance.

A major part of the Convair contribution was design and installation of an Operational Television (OTV) system at Cape Kennedy for surveillance of the launch vehicle prior to and during launch.



TV CONTROL CENTER—At Cape Kennedy this was Control Center No. 1, part of TV system that kept close watch on critical points during Apollo 11 launch.

Apollo 11 Launch Monitored In Detail by Sixty Cameras

Among General Dynamics' contributions to Apollo 11 was detailed TV surveillance of all critical areas related to the launch.

This was accomplished with the world's largest ground-based Operational TV (OTV) system, designed, engineered, integrated and installed at Apollo Complex 39 at Cape Kennedy by Convair division.

Sixty cameras fed pictures of the 363-foot vehicle and its ground support equipment to 163 TV monitors in the NASA Launch Control Center. The OTV provided pictorial coverage for use by national TV networks, since conventional cameras were limited to positions no closer than three and a half miles from the launch pad.

* * *

Convair's F. J. Dore, Dept. 580-2, appeared on ABC-TV New York last month with a presentation on future possibilities after Apollo 11. He narrated a film on Convair's proposed Triamese, reuseable launch vehicle, which he mentioned as a possible solution to more economical ways of sending vehicles into space.

Emmerich Speaks On Role of AIS

Lewis Emmerich, Quincy division manager of special projects, explained Apollo Instrumentation Ships' role in moon landing to millions of television viewers during an Apollo 11 launch-day show on NBC-TV.

He was interviewed at NBC's New York studios shortly after the launch.

'Solid State Welding' Technique Developed

A proprietary welding system which works on the principle of atom interchange and which leaves no visible weld joint is being researched by Convair division.

The resulting technology could be the basis for an entire new industry, according to E. D. Green, Dept. 491-0 senior applied manufacturing research engineer.

The system is called "solid state welding" or diffusion bonding. It is the joining of metals by bringing prepared surfaces into intimate contact and allowing physical atomic migration across the interface to establish a metallurgical bond.

The technique is based on the fact that metals are more or less active atomically. Two metals placed in contact will, given the right conditions, exchange atoms. The main ingredients affecting the exchange are time, pressure and temperature.

In the right combination for a specific material in a suitable environment, these ingredients will cause a complete coalescense of the interface, resulting in joint strengths equal to the base material.

Most welding is done by the fusion method, in which pieces of metal are placed together and the joint areas are heated to a liquid state and fused.

The resulting weld leaves a visible seam and changes the properties of the metal. Solid state welding, where the metal remains as a solid, eliminates all liabilities.

Solid state welding is particularly useful with configurations that involve T and L shaped joints. For example, in making a metal box the desired shape can be fusion welded, cast or forged. However, each method involves a limitation on the materials to be used.

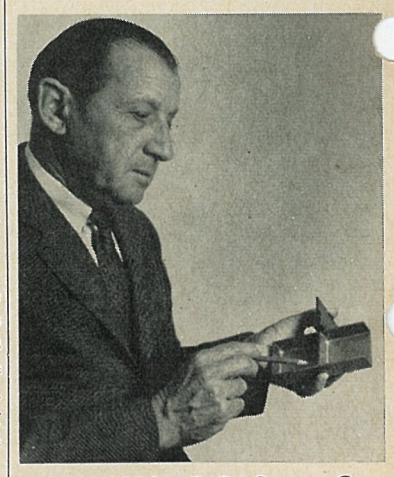
With solid state welding, rolled metal, stronger than cast or forged metal, can be used. Also, virtually any kind of metal can be used.

Original Convair experiments were with titanium. A system was developed capable of producing net size titanium components of 100 per cent joint efficiency of various configurations.

A method to effect integral filleting concurrent with effecting a solid state welded "T" joint was also developed.

"The combination of the solid state welding re-useable encapsulation - vacuum pack system, with solid state welding fabrication techniques and integral filleting techniques, provides an assembly method which is the key to practical application of solid state welding to the fabrication of both large and small heavy structural configurations," Green said. These configurations are normally forged, cast, extruded, machined or fusion welded. The solid state welding system will be most competitive with forging, Green stated.

Theoretically there is no limit to the size, shape or material that could be welded by the Convair solid state welding system. There is, however, a practical limit.



SEAMLESS—E. D. Green, Convair senior applied manufacturing research engineer, points out weld joint on box constructed by using Convair's solid state welding techniques which leave no visible seam. He emphasized that techniques are applicable to large structural components.

Other diffusion bonding systems such as roll diffusion bonding and laminate diffusion bonding will compliment solid state welding, Green believes.

"These three solid state joining techniques will not necessarily be competitors because each is applicable to different categories of structural components and has individual features," he said.

Society Honors Stress Expert

Convair fatigue specialist Clarence Smith, widely recognized authority on metal stress and fatigue, recently accepted the F. G. Tatnall Award from the Society for Stress Analysis in Philadelphia, Pa.

The annual award recognizes extended and noteworthy service to the society and the engineering profession.

Smith is internationally known for his Linear Strain Theory and the Smith Method for predicting cumulative fatigue damage. He has authored more than 40 papers and articles on fatigue and stress and has written a book for the Navy "Tips on Fatigue."

Following the award, Smith went to Stockholm, Sweden as one of nine U. S. representatives to the International Conference of Fatigue in Aircraft Structures.

En route to the Pennsylvania meeting Smith stopped in Madison, Wisconsin where he lectured at the University of Wisconsin engineering symposium.

A 27-year Convair veteran, Smith is currently working at General Dynamics' Harbor Drive Facility in San Diego as a research consultant.

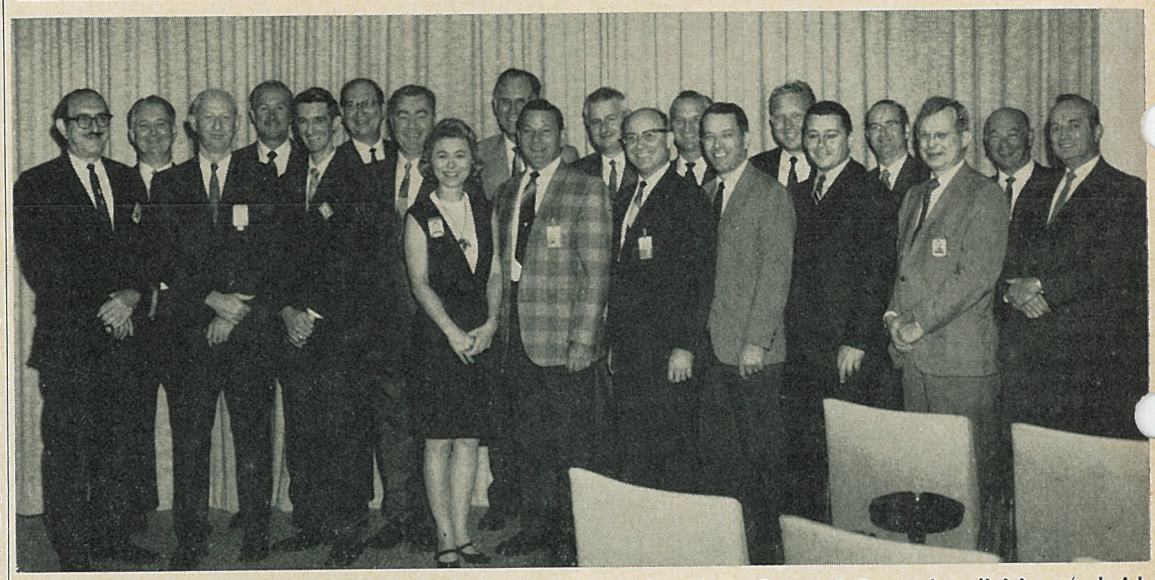
First Configuration Mgt. Meeting Held At Convair Plant

The first General Dynamics Configuration Management meeting convened at Convair's Kearny Mesa plant last month.

The meeting, attended by representatives from divisions/subsidiaries and the Corporate Headquarters, was one of a series of inter-divisional conferences set up to cross-feed information.

Configuration management is the discipline which assures adequate product identification, design change control and documentation of the original product and its successive changes.

Among agenda items were discussions on customer configuration management requirements and application of value engineering to a configuration management system.

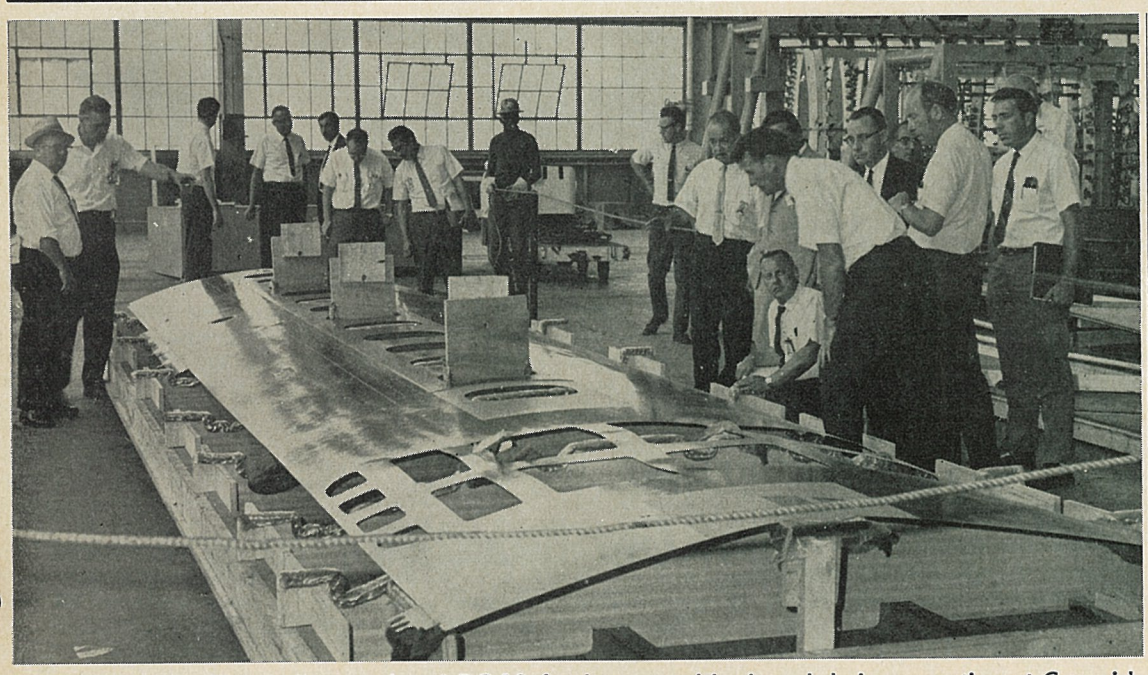


CONFIGURATION MANAGEMENT—Representatives of various General Dynamics divisions/subsidiaries attended recent Configuration Management meeting at Convair. From left: A. I. Ames, Convair; M. J. G. Boissevain, Quincy; R. B. Miller, Convair; G. W. Bates, Convair; W. B. Thompson, Dynatronics; C. G. Perdue, Convair; W. D. Staples, Electronics; Dottie Page, DatagraphiX; Wally Jeancon, Convair; A. H. Mandale, Fort Worth; A. E. Gilligan, Fort Worth; L. E. Hurley, Fort Worth; H. J. McIntire, Fort Worth; H. W. Wagner, Electronics; C. T. Bach, Electronics-SD; R. F. Barker, Electro Dynamic; A. E. Ruark, Convair; R. L. Rumage, Pomona; M. M. Sherman, Convair, chairman; G. A. Stowell, Electric Boat. Not shown but attending were E. L. Ball, Corporate Headquarters; Bob Harrell, DatagraphiX; M. S. Bickers, Convair.

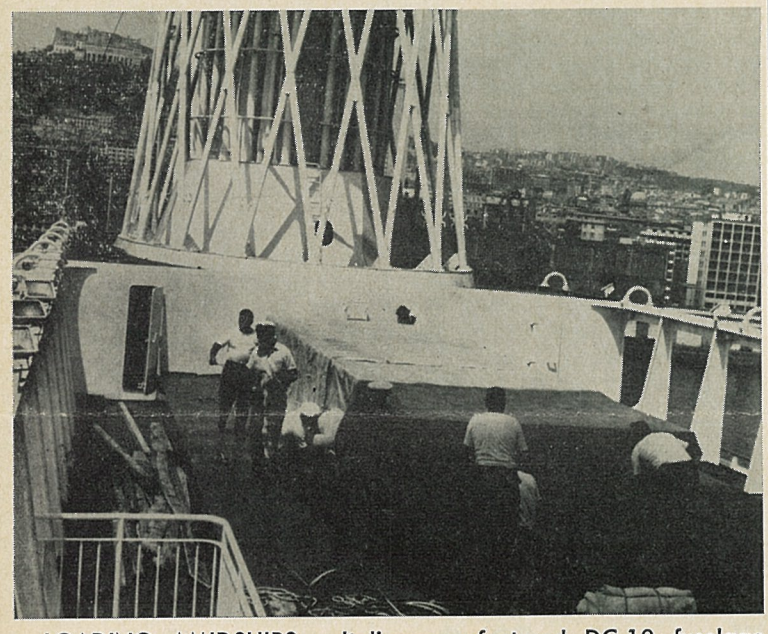
SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 16 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, August 20, 1969



FIRST PANEL—First Italian-produced DC-10 fuselage panel is viewed during uncrating at Convair's Lindbergh Field plant. Panel arrived via luxury liner and truck from subcontractor Aerfer Industrie Aerospaziali Meridionali near Naples.



LOADING AMIDSHIPS — Italian-manufactured DC-10 fuselage panel is lashed to topside deck aboard Italia tourist liner Michaelangelo for shipment from Naples to New York.

Italian-Built DC-10 Panel Gets 'Luxury' Ocean Trip

The first Italian-produced DC-10 fuselage panel arrived at Convair's Lindbergh Field plant Aug. 4, climaxing a 12-day trip from Naples via luxury liner and semi-truck.

Fuselage panel D-10 (right forward door and window section), built by Convair subcontractor Aerfer Industrie Aerospaziali Meridionali, was shipped from Naples aboard the Italia tourist liner Michaelangelo.

Too large for stowage in the ship's hold, the 9x31-foot crate carrying the panel was lashed topside. Liner sailed from Naples July 24 and docked in New York harbor July 31.

Offloaded in New York, the panel was transferred to a semi-truck and trailer and hauled cross-country to San Diego.

The crated panel, addressed to Harry Hoelter, Convair technical buyer, was turned over to Sam Braun, chief of procurement quality verification, for inspection prior to placement on its holding fixture.

Eight additional fuselage panels have been shipped aboard Italia liners from Naples seaport. Luxury ship Raffaello sailed Aug. 7 with four panels aboard, followed Aug. 15 by the Michaelangelo carrying her second load of DC-10 freight.

Final panels in Aefer's first complete 27 panel shipset are slated to depart Naples Sept. 21.

September's shipment will include some of the last panels to arrive via New York. As production tempo increases, Italian parts will arrive aboard ship at Long Beach and San Diego harbors direct from Naples.

Aerfer's Pomigliano D'Arco plant, located six miles northeast of Naples, will produce 300 shipsets for Convair during the five-year contract. Italian shipsets include above-floor-level panels and related parts for the tri-jetliner fuselage.

Atlas-F Mod. Work Ordered

Convair has received a letter contract from the Air Force for modification of 10 Atlas-F missiles. Logistics management services are also included in the contract.

The contract is a follow-on to the current Atlas E-F modification contract and will run to Dec. 31, 1971.

The division has received $500,000 initial funding for material procurement. Production work on the modifications is expected to begin Nov. 1. The definitive contract is expected Jan. 1, 1970.

In addition to the 10 boosters covered in the contract, hardware will be procured to enable Convair to provide two "quick mission" modifications.

AC-18 Launches NASA Satellite Successfully

Atlas-Centaur 18 successfully launched NASA's Applications Technology Satellite 5 into orbit Aug. 12.

The flight marked the 47th consecutive Atlas SLV success.

General Manager Jack L. Bowers said he was "extremely pleased" by the launch and noted that "it was a professional job by all concerned."

The launch occurred at 4:01:04 a.m. PDT from Complex 36A, Eastern Test Range.

Initial data revealed no Atlas-Centaur system problem or discrepancies. Booster engines cutoff occurred at 2:31:8 minutes into the flight, sustainer and vernier engines cutoff at 4:14:4 minutes, and Atlas-Centaur separation at 4:15:3 minutes.

In the all-important Centaur stage, the first Centaur "burn" occurred between 265.9 and 643.5 seconds into the flight. Centaur and the spacecraft then coasted 25 minutes before the second Centaur engines "burn" of 70 seconds placed the spacecraft in proper position for separation. This happened five seconds later at 4:40:14 a.m. PDT.

The spacecraft was placed into a near circular, synchronous, equatorial orbit to test advanced components and techniques for future communications, meteorological and navigation satellites. Tests include demonstration of precision stabilization in synchro-

(Continued on Page 2)

Annual Con-Trib Drive Scheduled Sept. 8-22

Convair Employes' Con-Trib-Club's annual membership campaign has been scheduled for Sept. 8-22.

Employes not now giving their "fair share" toward support of community health, welfare, youth, and community service agencies through Con-Trib will have an opportunity to sign for automatic contributions through payroll deductions.

"Fair share" is the equivalent of pay for four minutes work a day, or 8/10 of 1 per cent of salary.

The Con-Trib campaign will coincide with the county-wide United Crusade.

Del Dimmitt, division fire chief, will coordinate the campaign.

Bowers Lists Business Base

Convair division is assured of business activity at the current level for at least five years, based on "firm programs through 1973 and beyond," General Manager Jack L. Bowers told supervisors at his recent quarterly meeting.

At the same time, Bowers unveiled a division five-year plan which broke down prospects into firm business, high potential business, and programs for expansion.

The firm business is the "stepping stone to where we are going," and the base from which Convair can work on "our mission in life, which is to continue as a prime systems contractor," Bowers said.

Included in the firm business are the SLV-3, Centaur, Atlas E and F, F-111 support work, DC-10 fuselage and C-5 empennage.

Programs with high potential to increase the sales base include an F-106 modification, now being tested, further sales of ocean data stations and a proposed new jet trainer for the military.

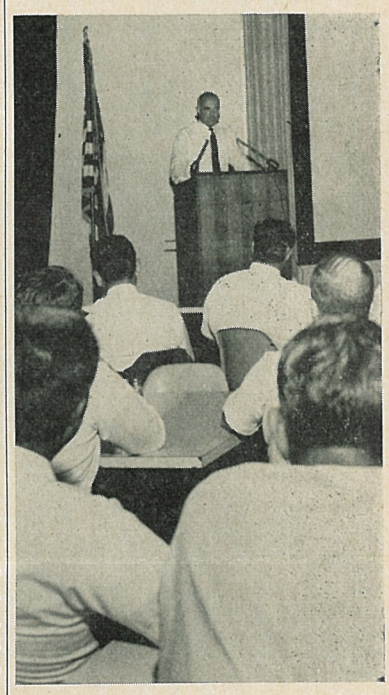
In addition, Bowers mentioned the AX program, the jet lift V/STOL and tilt wing V/STOL, reusable space transportation systems, experiment module definition study, the orbital research centrifuge, and the Improved Centaur.

Both NASA and the Air Force have shown interest in Convair's Triamese reusable space booster, he said, and the Air Force has shown renewed interest in the AX (an advanced attack aircraft).

Although the division is operating from a strong financial position, money to develop new programs must be spent very carefully with emphasis upon the most promising.

In reviewing division goals, Bowers reported that the division quality level is being sustained; the 100 per cent record for Atlas-Centaur is continuing; budgeted return on investment is being met but by a narrow margin. He mentioned specifically the need to increase Value Engineering proposals.

Bowers' most emphatic appeal was in the area of safety. He called upon all employes to exercise greater caution and attention to safety regulations.



MAPPING FUTURE — Jack L. Bowers, Convair general manager, shown addressing supervisors meeting at which he outlined division workload and called for redoubled efforts.

Ocean Data Systems Personnel Cited For Exceeding Targets

Ocean data systems Dept. 506-5 personnel have been awarded the Convair research and engineering department's Craftsmanship Achievement banner for outstanding performance during the second quarter of the year.

W. T. Dorrance, director of special programs, presented the banner and an accompanying certificate to Robert Devereux, ocean data systems manager, and Don Moody, assistant program manager, in ceremonies Aug. 5.

Ocean data systems personnel were cited for having exceeded targets for new business contracts; for personal contacts and liaison with customer organizations and other oceanographic, meteorological, and marine resources agencies; and for producing exemplary design innovations for Office of Naval Research ocean data stations and U.S. Coast Guard navigation sea buoys.

Convair currently is producing five large navigational buoys for the Coast Guard under a contract awarded in June, the first of which is scheduled for delivery next year **(GD/NEWS, June 23, 1969)**.

Research and engineering directors had judged ocean data sys-

(Continued on Page 2)



ENGINEERING "ENSIGN"—Ocean data systems personnel receive Convair research and engineering department's Craftsmanship Achievement banner for exemplary second-quarter performance. W. T. Dorrance, right, director of special programs, presents banner to R. F. Devereux and D. G. Moody, who also holds certificate.

Ten Evening College Courses Will Begin Week of Sept. 15

Ten fall semester San Diego Evening College courses have been scheduled at Convair's Lindbergh Field and Kearny Mesa plants and at Air Force Plant 19 beginning the week of Sept. 15.

Following is a listing of courses, meeting times, locations, and instructors:

Introduction to Supervision (Supervision 19)—4 to 7 p.m. Mondays, LF; 4 to 7 p.m. Wednesdays, Plt. 19; Hal Rubin.

Human Relations I (Supervision 20a)—4 to 7 p.m. Tuesdays, LF; Hal Rubin.

Management and Organization (Supervision 21) — 4:30 to 7:30 p.m. Tuesdays, KM; William Chana.

Effective Writing (Supervision 23)—4:30 to 7:30 p.m. Wednesdays, LF; Bill Burris.

Industrial Economics (Supervision 25)—4 to 7 p.m. Mondays, LF; David Chigos.

Production Planning (Supervision 27)—4 to 7 p.m. Thursdays, LF; W. E. Magnuson.

Shop Math (Related Technical Math 40)—4 to 7 p.m. Mondays, LF; Ed White.

Industrial Blueprint Reading (Industrial Technology 1)—4 to 7 p.m. Tuesdays, LF, Ernie Chavez; 4:30 to 7:30 p.m. Wednesdays, KM, El Madeo; 12:15 to 3:15 p.m. Tuesdays, LF, Ed Gurling.

Electronic Drawing and Circuit Schematics (Electronics Assembly 88)—4:30 to 7 p.m. Mondays, KM; Elza Milner.

Development and Operations of Safety Programs (Occupational Safety 70a)—4:30 to 7 p.m. Mondays and Wednesdays, KM; Len Breen.

Classes will meet in Bldg. 14 at LF, Bldgs. 17 and 33 at KM, and Bldg. 2 at Plt. 19. Registration will be at the first class meeting. All classes will have limited enrollment. Phone educational services, ext. 2564 LF, to reserve space in advance. Cost for each semester is only $1.50 for Associated Student membership plus purchase, if required, of textbooks and related materials.

Each of the courses will provide three units of college credit except Electronic Drawings and Circuit Schematics, which will meet 2½ hours per week and provide two units credit. The Development and Operation of Safety Programs course will meet five hours per week.

Six UC Courses Slated at KM

Six fall quarter University of California Extension courses have been scheduled at Convair division's Kearny Mesa plant.

"Introduction to Information Management" will be taught 5 to 8 p.m. Tuesdays, Sept. 30 through Dec. 16, by Charles K. Twohey.

"Introduction to Information Processing and Computer Programming" will be given 5 to 8:15 p.m. Thursdays, Oct. 2 through Dec. 18, by Fred Schwend.

"Computer Programming Systems — Concepts and Facilities" will meet 5 to 8 p.m. Wednesdays, Oct. 1 through Dec. 17, with John A. Hicks as instructor.

"Computer Application to Managerial Problem Solving and Control" will be scheduled 5 to 8:15 p.m. Thursdays, Oct. 2 through Dec. 18, with Robert Swanson instructing.

"Leadership Principles and Practice" will be presented 5 to 9 p.m. Fridays and 8 a.m. to 5 p.m. Saturdays, Sept. 26 through Oct. 11 with David Chigos as instructor.

"Introduction to Management Sciences" will be held 5 to 8 p.m. Mondays, Sept. 29 through Dec. 15, with G. G. "Bud" Rosbrook instructing.

Cost for each of the courses will be $60. Details on each, prerequisites for enrollment, classroom locations, and enrollment forms may be obtained by calling educational services offices.



ACHIEVEMENT—Jack L. Bowers, Convair general manager, right, receives Department of Defense cost reduction award from Col. Charles F. Merz, DCASPRO and DCAS San Diego district commander. Division was cited for helping reduce DOD procurement costs during 1967 and 1968.

Convair Wins DOD Award For Cost Reduction Program

Convair division has been awarded a Department of Defense Contractor Achievement Award for effectiveness of its cost reduction program.

The award, signed by Lt. Gen. Earl C. Hedlund, Defense Supply Agency director, and Rear Adm. Joseph L. Howard, deputy director, was in recognition of Convair's "systematic program to effectively reduce the cost of Department of Defense procurement during 1967 and 1968."

Col. Charles F. Merz, Defense Contract Administration Services (DCAS) plant representative and DCAS San Diego District commander, presented the award plaque to Jack L. Bowers, Convair general manager, in ceremonies at Kearny Mesa.

Criteria on which the award was based included top management sponsorship and involvement in cost reduction efforts, specific goals and objectives, procedures for documenting and reporting progress, a system for validating reported savings, employe motivation effort, and internal exchange of ideas on cost reduction.

Contractors who have received the Achievement Award and whose programs have been evaluated as outstanding for the following year also may qualify for the DOD Outstanding Program Award.

Schedule Changes For Bus Service

Bus service between Convair plants will operate under a new schedule beginning Sept. 1.

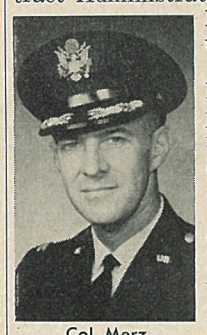
Buses will leave Kearny Mesa (KM) for Lindbergh Field (LF) every 40 minutes from 7:10 a.m. to 3:10 p.m., and will leave LF for KM every 40 minutes from 7:30 a.m. to 3:30 p.m.

Departure from LF for Air Force Plant 19 will be every 20 minutes from 7:10 a.m. to 3:50 p.m., and from Plt. 19 for LF every 20 minutes from 7 a.m. to 3:40 p.m.

Passengers going from Plt. 19 to KM or from KM to Plt. 19 will transfer buses at LF.

Merz to Head DCAS District

Col. Charles F. Merz, USAF, commander of the Defense Contract Administration Services Plant Representative Office, (DCASPRO) has been appointed commander of the San Diego DCAS District.



Col. Merz

He succeeds Cdr. Melvy M. Brown, USN, who retired from the Navy July 31. Col. Merz will continue to head Convair DCASPRO. In his combined post he is responsible for more than 150 San Diego companies.

The colonel took over as DCASPRO commander at Convair last August **(GD/NEWS, Aug. 28, 1968).** His previous tour of duty was as deputy director of procurement and production at USAF Military Airlift Command.

A native of Pontiac, Mich., he graduated from the U.S. Naval Academy in 1942 and holds masters degrees in engineering administration from the Air Force Institute of Technology and in industrial economics from Purdue.

Convair AC-18 Puts Satellite in Orbit

(Continued from Page 1)

nous orbit by use of gravity gradient techniques, data acquisition, and micro-thrust propulsion.

Among Convair officials at ETR for the launch were K. E. Newton, director of launch vehicle programs; L. I. Medlock, director of reliability control; Dick Keehn, Atlas program manager; Deane Davis, Centaur program manager, and G. W. (Gerry) Lucas, project engineer for the ATS missions. Launch conductor was Daniel Sarokon.

Ocean Data Personnel Cited on Performance

(Continued from Page 1)

tems achievement toward its Craftsmanship goals as being best in the department during the second quarter. Dorrance said work of 72 research and engineering functions toward 260 goals was considered in selecting the banner winner.

Electronics-SD Completes and Ships First in Series of AGE Test Stations

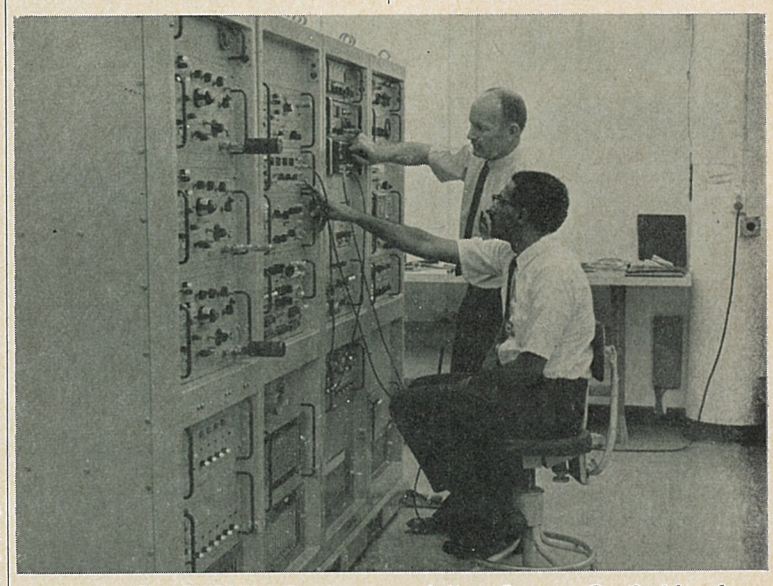
Electronics-San Diego has shipped the first in a series of 15 Aerospace Ground Equipment (AGE) test stations, according to Bob Williams, program manager 6891 AGE series.

Designed for F-111 Radar Homing and Warning (RHAW) checkout, the unit was a combined effort with Convair Dept. 203-1 responsible for one rack and Electronics-SD building the remaining three component racks. Convair also supported test operations while Electronics-SD performed integrated and complete station testing.

Included in the team effort is Electronics-Rochester which develops, designs and provides engineering models for AGEs in this RHAW series. Units are designed to test avionics systems in F-111s and are capable of avionic fault isolation within 30 minutes. Test units are self-contained and track irregularities within seven sets of avionics components in F-111s.

Remaining units in the series are scheduled for shipment beginning in September.

In addition to RHAW sets, Electronics-SD is continuing to produce AGE Doppler Radar Test stations for the F-111. Three have been shipped to Forth Worth division so far.



FINAL CHECKOUT—Design specialist Carter C. Smith, foreground, and electronic engineer Glenn C. Hemphill make station test of Electronics-San Diego Aerospace Ground Equipment (AGE) 6891 unit prior to shipment.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between August 16 and August 31.

Thirty-year: Dept. 400, C. E. Damschroeder Jr., W. H. Megown; 401, C. E. Jones; 508, J. E. Quigley.

Twenty-five-year: Dept. 016, Anna T. Cunnion; 031, J. D. Jackson; 195, R. Jennings; 250, Alma W. Marshall; 400, R. George.

Twenty-year: Dept. 113, L. M. Weeber; 143, J. H. Cheek, 149, R. R. Chilcote; 170, R. L. Schahn; 195, O. V. Pratt; 250, L. J. Renz; 515, A. E. Nussbaumer.

Fifteen-year: Dept. 002, J. K. Kramer; 027, J. E. Luzader; 130, Elizabeth C. Patterson; 194, J. W. Hanning; 400, J. D. Hartsell, G. E. Renick; 403, E. S. Armstrong; 506, H. M. Ikerd; 519, E. H. Carman; 526, L. J. Gaber; 562, W. J. Tartar; 566, J. H. Getz; 581, A. W. Spencer; 840, C. P. Freeman.

Ten-year: Dept. 016, J. M. Santo; 059, J. Michaels; 101, Barbara L. West; 143, E. G. Brown; 170, Charlotte R. Cannon, R. Hoepner, L. R. Reardon; 193, Mary E. Harrison, J. E. Stiens; 195, D. V. Roshong; 202, K. C. Phelps; 401, T. H. Mitchell; 507, W. J. McKillip, J. W. White; 508, W. Ruppert, W. A. Yates; 512, R. J. Elling; 572, L. C. May; 780, A. C. Herter Jr., H. E. Laffoon, J. E. Sandiford Jr., G. H. Kramer; 810, E. R. Messer; 966, D. D. Ward; 967, J. B. Stangl; 979, H. C. Beers, L. A. Taylor.

ELECTRONICS

Twenty-five-year: Dept. 421, M. P. Elie.

Twenty-year: Dept. 422, D. R. Miller.

Fifteen-year: Dept. 422, W. N. Marti; 428, D. A. Graybill; 614, G. T. Herring Jr.; 616, R. W. Perrin; 713, G. G. Bergant.

Ten-year: Dept. 391, J. S. Buchanan; 562, R. D. Sisemore; 712, J. Hamill.

Invention Disclosures

CONVAIR

BLOOM—G. E., Dept. 967, M. T. LIEN, Dept. 551. Audio Noise Generator.

BURNS—H. U., Dept. 850. "G" Tank.

HEATH—W. N., Dept. 979. Gain and Phase Measurer.

HUNTSMAN—G. A., Dept. 401. Chip Guard.

JENKINS—A. L., Dept. 554, P. E. MARENHOLTZ, Dept. 543. High Speed Binary Digital Counter.

KENNEDY—N. H., Dept. 967. DC to AC Carrier Converter.

MEYER — R. H., Dept. 401. Air Bumper.

MILLER—R. L., Dept. 401. Combination Insect Exterminator, Deodorizer and Burglar Alarm.

O'BARR—G. L., Dept. 572. Door Lock.

PEARSON—H. E., Dept. 533. Wheel Disassembly Safety Device.

PEDDIE—G. D., Dept. 491. Thermoplastic Honeycomb.

Rider-Driver

RIDE WANTED—Brookside to Kearny Mesa plant, 7 a.m. to 3:30 p.m. shift; phone Art Sambrano, ext. 2514 KM or (home) 463-1578.

Deaths

DANZER — William E., Dept. 401-4, died Aug. 8. Survivors include wife, Jean; two daughters, Mrs. Gay Tucker and Miss Debra Danzer; and a stepson, John Corlett.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Aug. 1.

Dept. 015, J. Baptista, $15; 027, R. Barnhard, $18.60; 143, H. A. Benner, $15; 020, E. Bowers, $30; 507, R. V. Bucaro, $104.90; 027, D. W. Burright, $126.10; 400, E. L. Campbell, $15; 733, N. Chaudoin, $15; 027, R. E. Cloud, $107.50; 027, J. G. Covell, $16.20; 979, J. F. Dean, $30; 002, E. D. Fountain, $15; 144, J. J. Gallant, $363.30; 019, E. D. Gardini, $15; 016, W. J. Gibson, $15; 756, C. A. Harrington, H. D. Prince, $15.50 each (joint award); 143, M. M. Henry, R. R. Robinson, $33.95 each (joint award); 401, J. A. Hernandez, $100.70; 027, W. F. Hoover, F. J. Serio, $115.25 each (joint award); 143, H. A. Jackson, $259.20; 146, R. B. Kalanquin, $15; 149, T. S. Knight, $68.80.

Dept. 144, W. W. Lacy, $60.30; 250, R. L. Leib, $229.80; 015, R. B. Leonard, $20.30; 507, R. H. Lewis, $24.60; 401, A. M. Lintvedt, $42 (two awards); 045, F. J. Longworth, $15; 574, W. A. McBrayer, $28.30; 144, C. E. Mifflin, $180.90; 149, C. A. McKinney, $15; 149, B. J. Moore, $15; 045, G. P. Peck, $30; 015, A. Reiter, $15; 019, G. F. Reutlinger, $31.80; 401, D. O. Riseley, $53.30; 149, S. M. Rynearson, $138.20; 002, V. A. Talbot, $15; 027, P. L. Walker, $15; 589, J. P. Walsh, $20; 027, C. W. Westhydeman, $33.90; 979, K. C. White, $15; 507, T. E. Williams, $133.80; 016, A. J. Winner, $29.70; 780, S. W. Zeiss, $15; 544, R. C. Zuranski, $816.50.

Employe Suggestion awards1 approved for the week ending Aug. 8.

Dept. 027, A. R. Anderson, $84.30 (three awards); 566, J. J. Arnieri, $33.70; 250, D. Belchamber, $15; 027, G. V. Bjorn, $33.40; 142, G. L. Breese, $15; 507, R. V. Bucaro, $474.70; 420, W. K. Chan, $189.60; 002, G. R. Cheshire, $33.60; 144, J. F. Choitz, 15; 780, N. S. Cole, $83.20; 027, J. G. DeLara Jr., $34.10; 059, R. L. Dixon, R. G. Graves, $266.25 each (joint award); 016, D. M. Goodwin, $15; 027, J. R. Haynes Jr., J. H. Parsons, $12.55 each (joint award); 146, N. T. Keith, $303.80; 027, T. W. Kerns, $31.20; 250, G. J. Kleber Jr., $15; 019, P. LoCoco, $15; 146, K. McCafferty, $25.

Dept. 001, H. G. Mondy, $15; 250, M. E. Nicolet, $15; 045, L. Parsons, $35.40; 027, L. Peralta, $52.10; 143, D. W. Reynolds, $179.90; 142, I. J. Romero, $15; 572, G. E. Sawyer, $50; 979, J. H. Seymour, $15; 027, G. R. Simpson, $21.50; 027, M. D. Stonebreaker, $50.20 (two awards); 985, C. E. Vickers, $30 (two awards); 250, W. White, $15; 027, F. L. Wilson, $16.40; 835, L. L. Yarbrough, $25; 027, H. M. Zeno, $55.50 (three awards).

Personals

CONVAIR

I wish to thank my many friends at Convair for the lovely flowers and expressions of sympathy received during my recent sorrow.

Hazel Stone
Dept. 524-4

* * *

We wish to take this opportunity to thank our friends at Convair for the flowers and sympathy received during the recent illness and loss of our beloved mother and grandmother.

Paul DeBacca and Family
Dept. 059-9

* * *

I wish to thank the Con-Trib-Club and my fellow workers for their help and thoughts during my recent illness.

Ken Lindsey
Dept. 250-0

Retirements

CONVAIR

BAUM—Ralph J., Dept. 521-6. Seniority date July 12, 1961, retired June 11.

BAUMANN—Ernest S., Dept. 059-8. Seniority date July 28, 1959, retired July 31.

FISHER—Earl, Dept. 524-4. Seniority date Dec. 27, 1955, retired July 31.

HUGHES—John E., Dept. 962-8. Seniority date Sept. 3, 1940, retired July 31.

LAMP—Laurel G., Dept. 533-2. Seniority date Jan. 4, 1951, retired June 27.

SABIN—Marvin D., Dept. 832-0. Seniority date Mar. 25, 1957, retired July 31.

VERNON—Alva A., Dept. 193-3. Seniority date Jan. 18, 1937, retired July 31.

WYNN—Marvin D., Dept. 832-5. Seniority date March 25, 1957, retired July 31.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Coal Mining Important To Resources Group

(General Dynamics' "Resources Group" includes Material Service Corp., Freeman Coal Mining Corp., The United Electric Coal Companies, and Marblehead Lime Co., all with headquarters in Chicago; Darlington Brick and Clay Products Co. in Pittsburgh and Darlington, Pa.; and Powell & Minnock Brick Works, Inc., of Coeymans, N. Y. This is the first of three articles on the Group's activities.)

The Resources Group might be called General Dynamics' "down to earth operations." This group of subsidiaries is made up of companies that all rely on natural resources for ingredients or for the products they sell. Employes at Freeman Coal Mining Corp. and The United Electric Coal Companies, for instance, depend entirely upon the earth for their livelihood.

The two Resources Group coal companies produce the same product, but they take entirely different approaches to mining. Freeman Coal operates deep shaft mines, taking the coal from as far as 800 feet underground. United Electric takes the product from veins up to 100 feet underground, stripping away the earth above the coal with electric shovels and excavating wheels that rank among the biggest machines used in any industry.

In southern and central Illinois, where both firms' mines are located, coal is found in layers or strata deposited there in ages past in the form of vegetation that solidified over a period of millions of years. The coal seams mined by Freeman are from 350 to 800 feet underground and are from six to 10 feet thick. The coal lies in the ground between layers of rock, like a slice of cheese in a sandwich.

Freeman, which employs over 1,900 and operates five deep mines, has produced coal in Illinois for 50 years. During that time, output has risen from three million to 10 million tons a year, due largely to the introduction of modern, high-speed mining equipment.

Working two operating shifts and a maintenance shift, the 575 employes at Orient 3, Freeman's largest mine, produce three million tons a year. At a depth equal to the height of an 80-story building, they cut long, straight corridors through solid coal. These corridors, which run side by side like the streets of an underground city, are often more than five miles long.

Next, holes are cut crosswise at intervals through the walls of these corridors. This leaves pillars of solid coal, as big as 50 to 60 feet square, to support the roof.

Each step in mining the deposit is carefully planned by the company's engineers, who also maintain meticulous records of geographical progress as work proceeds.

The coal is mined mechanically at all Freeman's mines. At Orient 3, for instance, there are 14 "continuous miners," machines operated by a single employe that rapidly cut coal from the vein with what looks like a huge, sharp-toothed circular saw. Others drive shuttle cars that carry the coal from the mining machine to a conveyor belt system that takes it to the preparation plant above ground. This system of conveyor belts extends 4½ miles through the underground corridors!

Orient 3's preparation plant is one of the most complex in the country. It can process more than 100 varieties of coal. Varieties differ according to size, amount of ash and oil treatment. The raw coal is washed, separated from dirt and rock, sorted, and sometimes treated with a dust-preventing oil.

Orient 6, Freeman's newest mine, will also produce three million tons a year when it is completed. The new mine will employ the latest underground mining equipment and techniques, and a highly automated preparation plant, now under construction, will process both coarse and fine coal sizes. This plant will give Orient 6 the flexibility to furnish coal to the metallurgical market, as well as the high-grade utility market.

Freeman has about 500 million tons of coal reserves, and additional deep mines are projected to serve the steadily growing utility market.

United Electric employs 650 and operates four surface mines, producing five to six million tons of coal a year. The coal produced at two of the mines is shipped by barge on the Illinois River.

United Electric, which began its mining operations in 1923 Near Canton, Ill., pioneered the reclamation of mined land. In 1938, before there were laws mandating reclamation, it became the first coal company to employ a full-time agronomist to study and plan the creation of "new lands."

UEC now owns 5,900 acres of "new land" in southern Illinois—pine and hardwood forest, peach and apple orchards, lush pastures and lakes stocked with fish and alive with wild ducks and geese during the fall of the year. This land was reclaimed while the company stripped 25 million tons of coal from the soil.

A similar program has been carried out at UEC's mines in central Illinois. "New land" is being put to its most unusual use at Buckhart Mine, where United Electric is raising a herd of bison on a 70-acre range.

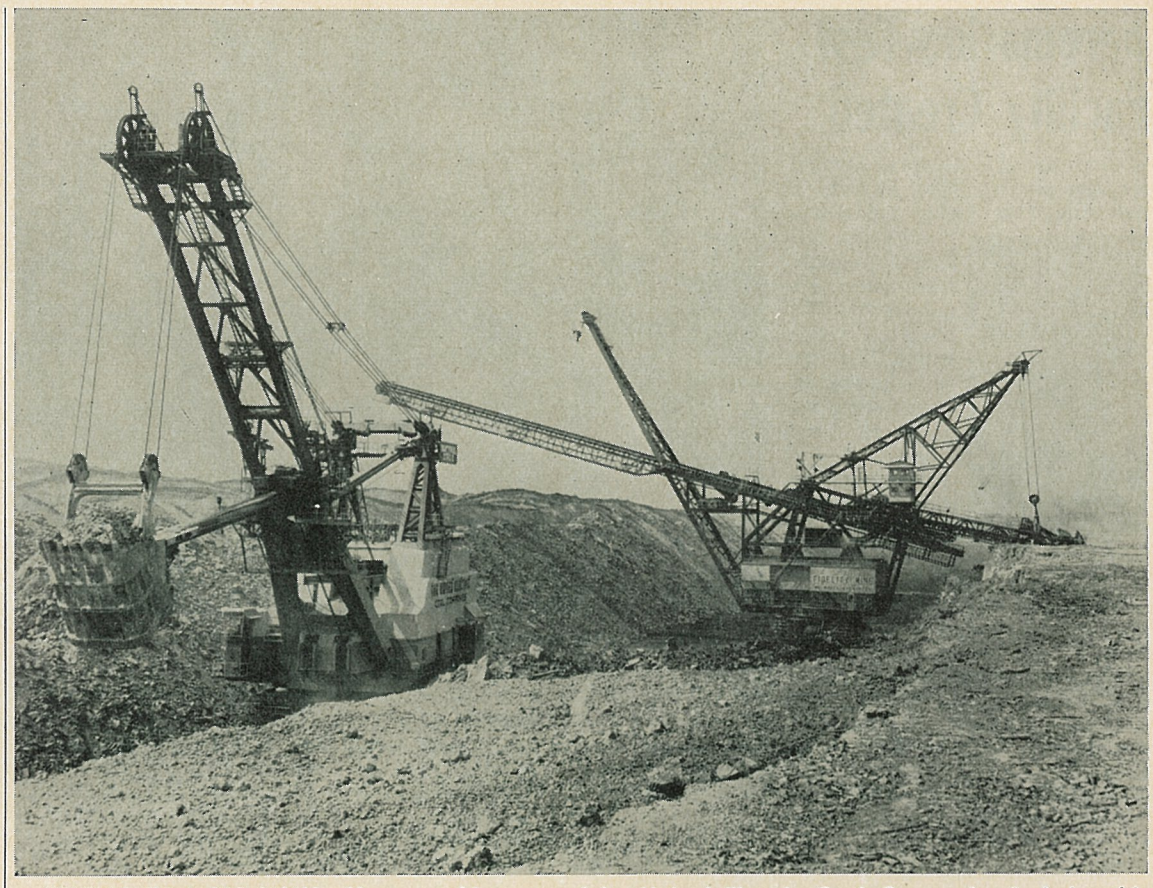
Strip mining techniques vary according to the topography of the land and the type of equipment used. In general, the overburden must be lifted from the coal in long, narrow pits or trenches. After the coal is removed from one trench, another is dug immediately adjacent and the earth and rock from the overburden are placed in the preceding void. As this operation is continued, huge furrows appear, row on row, as if created by a gigantic plow.

But unlike the ordinary plow, the shovels bite deep, down to a depth of 100 feet or more, and bring to light trace elements which are important to plant and crop fertility and resistance to disease.

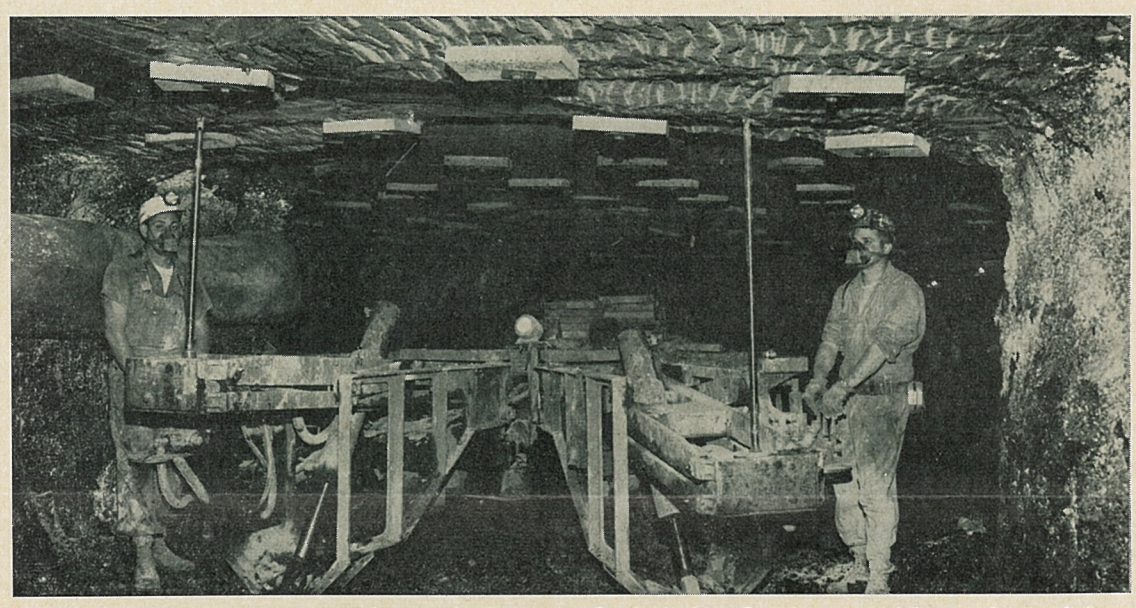
One of the major reasons for the success of UEC's reclamation program is the manner of mining. United Electric was the first to develop the "wheel" type of excavator. This removes the overburden by digging upward so that dirt and shale are deposited on the land in such a way that the earth can be regraded with tractors and easily planted.

After the softer overburden has been removed by the awesome wheel, a huge shovel is used to dig the shale and rock which lies above the coal seam. In most cases, the "new land" is first converted to pasture with seed sown by air or deposited in a slurry that is sprayed from tank trucks.

Future articles in this series will deal with the other Resources Group companies.



MINING IN A BIG WAY—Huge machinery used by United Electric Coal Companies includes this striping shovel (left) and excavating wheel (right) at Fidelity Mine in southern Illinois. Wheel is as tall as 20-story building and longer than football field. Shovel, which weighs nearly five million pounds, has bucket large enough to hold two automobiles.



ROOF BOLTING—Miners at Orient 6, Freeman Coal Mining Corp's newest deep mine, reinforce ceiling of shaft with bolts that bind strata together.



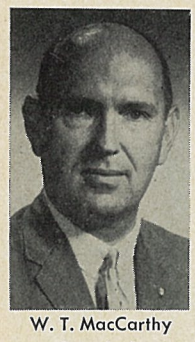
BLOOMING—Apple trees blossom on land that was once part of strip mine.



RECLAIMED—Typical of "new land" at Du Quoin, Ill., that Fidelity Mine reclaimed are these scenes. At left is "Lake of the Pines" while at right cattle are "at home on new range." Restoration of acres from which coal has been stripped is important part of enlightened coal mining. Range animals even include buffalo herd grazing on pastures.

Aeromarine Test Facility Created

Creation of a General Dynamics Aeromarine Test Facility in San Diego to better serve customers and divisional programs has been announced by Edward H. Heinemann, Corporate vice president-engineering and program development.



W. T. MacCarthy

The new facility will have three integral parts — the low speed wind tunnel at Convair's Lindbergh Field plant and the high speed wind tunnel and marine tow basin on Harbor Drive.

W. T. MacCarthy is manager of the combined facilities. J. H. Struthers is supervisor of the low speed wind tunnel, D. P. Cummings is supervisor of the high speed wind tunnel, and A. W. "Flag" Adams is supervisor of the marine tow basin.

Convair will manage the new organization, which will merge all current aerodynamic and hydrodynamic test operations in San Diego and will be staffed by personnel from the tow basin and wind tunnel test operation.

"Joining of these two staffs into a cohesive unit has obvious advantages," Heinemann said. "The anticipated benefits from this combination of air-sea expertise will give us a stronger overall capability for current and future test programs."

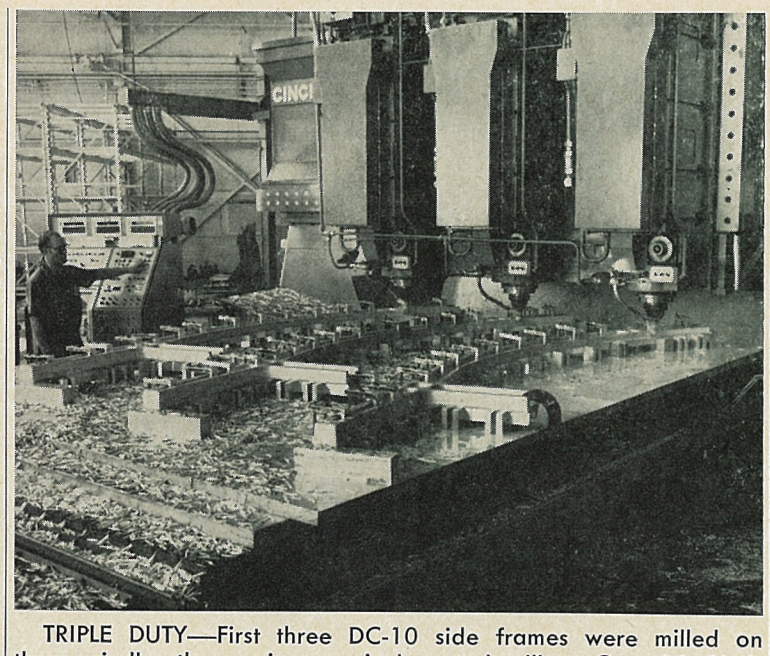
The two wind tunnels have been used extensively in model testing on major aircraft programs. The tow basin has been conducting tests recently for oil companies in conjunction with their offshore drilling activities. The tow basin will continue to provide marine consulting services for private customers as well as for the U.S. Navy.

Novice Piloting Course Slated

A 13-week course in small boat piloting and seamanship will be conducted for employes and families from 6:30 to 9:30 p.m. Thursdays at CRA Clubhouse beginning Sept. 25.

R. J. Cook, Dept. 130-1 will instruct. Sponsor is the Mission Bay Power Squadron. There will be no charge except for a textbook.

The course will be for beginners. It will include a two-hour field trip aboard a charter excursion boat to familiarize the class with navigational aids. Children over 15 years of age may attend.



TRIPLE DUTY—First three DC-10 side frames were milled on three-spindle, three-axis numerical control mill at Convair's Lindbergh Field plant late last month. Charles Valentine, numerical control machine operator, is at left. G. D. Carroll, Dept. 015 numerical control coordinator, said setup was first of 28 for milling similar frames for DC-10s.

Information Transfer Satellite Study OK'd

Convair has received a $200,000 contract from NASA's Ames Research Center to conduct an information transfer satellite concept study.

The study will determine the role of satellites in information transfer systems of the next decade.

At present, communications satellites are used as simple communications relays, such as the Early Bird satellite. Here information is transferred from one ground station to another which distributes to users. Imminent are broadcast satellites where a ground station originates a TV program and the distribution to home receivers will be done by the satellite directly.

For the future, however, communications planners envision systems where an individual in his home or office might originate a request for information from a centralized source thousands of miles away and the source replies directly. This system may have to service thousands of replies simultaneously.

Information transfer systems have already been proposed for specific information categories including biomedical communication, educational information, library retrieval, national agriculture information and classroom teaching.

The Convair study will look at the feasibility of the proposed system including who will use it, where located, potential growth, advantages of ground equipment, space systems or a mix of ground and space facilities.

Once sufficient data has been assembled on individual missions and reasonable feasibility criteria have been established, a preliminary computerized analysis will be made of each proposed mission to determine if it is a suitable candidate for a satellite system or if it might be considered in combination with other missions.

Criteria in the analysis will incorporate physical, economics and legal-political limitations. A numerical rating, based on economic advantage compared to equivalent ground systems and weighted against a need and schedule matrix will be used to develop a priority listing of proposed ITS systems.

Perhaps the most difficult part of the entire study will be determining what the state of the art will be in the middle 1970s.

One of the means used to overcome this difficulty is to use other Convair research studies as an indication of what is to come. Two of these studies are the Improved Centaur launch vehicle and the Triamese reusable launch vehicle. In addition, some of the work on information transfer has already been completed through the Convair Television Broadcast Satellite study.

Program manager for the study is J. A. Fager, Dept. 581-6. Project manager is P. A. Bergin, Dept. 598-1.

Diablo Canyon Men In Convair Course

Twelve employes of Pacific Gas and Electric Co. of San Francisco will complete a course Friday (Aug. 22) in Convair's school of non-destructive testing.

They are supervisors, engineers, and inspectors who will be employed in construction of the Diablo Canyon atomic power plant.

K. M. Boekamp, administrator of the school, said the training is being tailored to specific needs of the trainees. A previous class of 12 employes from the same firm completed a similar course July 23.

Editor Will Assist With Nixon Movie

Betty Miller, Convair, Dept. 516-0, has been selected by John Hynd Motion Picture Enterprises and United States Information Agency (USIA) to write the script for a USIA film on President Richard M. Nixon's West European trip earlier this year.

The 45-minute documentary, narrated by screen star David Janssen, will be shown in theaters overseas.

A film editor and senior script writer in the motion picture and TV section, Miss Miller has worked on more than 150 films for Convair.

Sustained Performance Awards Earned by 28 Convair Depts.

Twenty-eight departments have qualified for Convair Craftsmanship Sustained Performance certificates, based on their performance for the first half of 1969.

They are Dept. 001, 003, 015, 016, 019, 027, 031, 045, 049, 401, 420, 518-0, 731, 732, 733, 759, 761, 780-1 through 6, 833-2, 836, 840 KM and 840 LF.

In reviewing performance, L. I. Medlock, director of reliability control, said "It is gratifying to note that, at the half-year point, the division has maintained a cumulative quality level exceeding its goal."

He said 71 per cent of manufacturing departments and 86 per cent of non-manufacturing departments are at or above their goals and more than 50 per cent of the departments show an improving trend.

Medlock singled out Dept. 733 for special commendation, noting a "dramatic improvement over a five-month performance period," and Dept. 401, which had a consistently good record, even though under an increasingly heavy production schedule.

Two to Serve In UCS Drive In Community

Two Convair men will serve nine weeks with United Community Services as "loan executives" to assist in the 1969 United Crusade.

They are W. E. (Wes) Magnuson, Dept. 140-1 chief of special projects in reliability control administration, and C. F. McMenamy, Dept. 520-1 group engineer.

Both begin their UCS duties Sept. 10 with a three-day orientation program. They will be assigned to the "industrial, commercial, services" division which works with large firms in San Diego. The goal for 1969 is $5,500,000.



Wes Magnuson C. F. McMenamy

Magnuson served as a "loan executive" last year and was recently named Convair Management Club "Man of the Year" (GD/NEWS June 25, 1969).

McMenamy received the San Diego Institute for Creativity's first community relations award in 1967 (GD/NEWS July 12, 1967); is the chairman of the advisory committee and executive council of Community Educational Resources, San Diego County Department of Education.

In addition to the two "loan executives," Jack L. Bowers, Convair general manager, is serving as vice-chairman of the major firms division of United Crusade.

Astronauts Dinner Attended by Lewis

Roger Lewis, General Dynamics president, and Frank W. Davis, Fort Worth division president were among guests attending President Richard M. Nixon's Aug. 13 state dinner honoring Apollo astronauts Michael Collins, Edwin E. Aldrin Jr. and Neil Armstrong.

Held at Los Angeles' Century Plaza Hotel, the event was termed "the dinner party of the decade, perhaps of the century." The fete climaxed a day-long transcontinental tribute of parades and receptions in New York and Chicago.

The black tie affair was said by government historians to be the first state dinner held outside the White House in many years.

CRAFTSMANSHIP

'Bargain Cost' Management Seminars Held

About 600 Convair employes during the past year have attended six-hour management seminars combining selected information from more than 20 management consultant firms across the country and related articles from Harvard Business Review and other publications.

Jack Croft, chief of educational services, said the Convair seminar was developed to provide supervisory personnel with maximum benefit at lowest possible cost. Techniques for employe improvement through personal motivation are stressed.

David Chigos, an education specialist in Dept. 130-3 and a candidate for a doctorate in leadership from United States International University, is the instructor. The seminars have been conducted for both first and second shift personnel at Kearny Mesa, Lindbergh Field, and Vandenberg AFB.

Three hundred supervisors and senior-level engineers from Convair's research and development department have attended the seminars since May 27 at Kearny Mesa and Lindbergh Field.

Included were selected personnel from product design, engineering technologies, engineering administration and services, advanced systems, project engineering, the DC-10 project office, special programs, and military space programs.

Dan Applegate, director of product design, said arrangements were made for supervisory personnel in research and engineering to attend after one of the seminars had been attended and evaluated by representatives from the department.

"It's undoubtedly one of the best seminars of its kind available for the modest amount of time and money required," he said.

Harry Mellinger, chief of project systems engineering, assisted with scheduling.

Many first-line supervisors in operations and other departments also have attended the seminars, which are scheduled two hours a day for three days.

Chigos said next of the seminars is scheduled Aug. 26-28 and that others are planned in the fall.

Information can be obtained and reservations made for attendance by calling Chigos, ext. 2564 LF.

Five From Convair Teach 'Key Man' Class

Five from Convair recently served as accident prevention course instructors in a "key man development program" sponsored by the American Society of Safety Engineers and the San Diego Safety Council.

They were John Hopman, Dick Schulz, and Len Breen of Dept. 130-8, Helen Werdelman of Dept. 130-2, and Dave Chigos of Dept. 130-3. The course was geared toward the supervisor as "key man" for small businesses without their own safety departments.

Smooth Transition

Son Selected to Succeed When John Riehl Retires



FAMILY AFFAIR—Construction maintenance mechanic John A. Riehl gives some final instructions to son John Jr. When elder Riehl retires from Dept. 250-1 Aug. 28 son will take over his job.

Construction maintenance mechanic John A. Riehl's son has always held an avid interest in his dad's job—and he liked it so much that he'll succeed his father upon latter's retirement Aug. 28 from Convair Dept. 250-1.

"John Jr. was always curious about what I did at work," recalls Riehl. "Then we worked together for three years awhile back and I taught him about all I knew about construction maintenance."

John Jr., 25, presently in Dept. 250-2, evidently learned his lessons well. He was selected by Joe Childress, Dept. 250 foreman, for promotion to the elder Riehl's post.

Young Riehl has been with Convair more than two years, working on the landing mats program and in the machine shop.

Beginning Aug. 29 his new job will call for platform layout, iron work and extensive welding layout on new construction jobs.

And what of father? "I'm going fishing."

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Aug. 26. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS — Meeting tonight (Aug. 20) 7:30 p.m. High Sierra weekend Aug. 30-Sept. 1.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—San Diego Bay 50-mile ride, Aug. 23, 7:30 a.m. leave from Balboa Park.

BOWLING—Winter leagues now forming.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS — Meet Tuesdays and Thursday, 7-10 p.m.

CHORUS — Rehearsals Wednesdays, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GOLF—Torrey Pines tournament, Aug. 30-31.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING — Big Bear weekend, Sept. 12-14. GD family skate night each Thursday, 6:15-7:45 p.m. House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Aug. 24, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Aug. 21, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB — All-Western Equitation Show, Aug. 24, CRA ring at Missile Park, starting at 8:30 a.m. Hayride at Black Mountain Ranch, 7 p.m., Aug. 27.

ROAD RUNNERS—Meeting Aug. 28, 7:30 p.m., Gillespie Field Clubhouse.

SAILING—Meeting Aug. 27, 7:30 p.m.

SCULPTURE — Workshop sessions, Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting Sept. 2, 8 p.m., South Bay Club.

SPECIAL EVENTS—Small boat piloting and seamanship class starts Sept. 25, 6:30-9:30 p.m. CRA art show Sept. 12-13, entries now being accepted.

SQUARE DANCE — Dance Thursdays, 8-10 p.m.

STAMP CLUB — Meeting Aug. 28, 7 p.m.

TABLE TENNIS—Play Fridays, 7:30 p.m., Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOASTMISTRESS — Meet Sept. 2, 7 p.m.

TRAILERS — Meeting Sept. 2, 7:30 p.m.

WIVES CLUB—Potluck and craft session Aug. 27, 10 a.m.

WOMEN'S GOLF—Torrey Pines tournament, Sept. 13.

Tickets On Sale For Sports Events

Tickets are on sale at CRA and employe benefits outlets for several sports events.

Today is the last day to buy tickets for the San Diego Chargers vs Cleveland Browns game. Tickets for the Chargers vs Los Angeles Rams will be on sale Aug. 25-27, and for Chargers vs Kansas City Chiefs, Sept. 2-11. Available are $6 and $4.50 seats.

Sept. 3 is deadline for Ice Follies tickets for the 6 p.m. Sept. 7 show. Available are $4 and $2 tickets for adults (a $1 saving) and $2.50 and $1.50 tickets for youth under 17.

Tickets for the Industrial Recreation Council's Jai Alai evening Aug. 30 are on sale at $7.50. Included is a reserved seat for the Jai Alai games, round-trip transportation, cocktails, dinner, and a souvenir program.



CHAMPS—Sock-It-To-Me's were undefeated 1969 Convair volleyball champions. From left are (seated) R. M. Rager, manager H. L. Hahn, F. W. H. Anding, V. P. Donnelly; (standing) R. E. Anspach, A. L. Vinzant, E. R. Kimmy, S. Pauchnick. M. J. Debreceni and D. W. Stein were not present for photo.

Labor Day Weekend in Sierras Planned by CRA Adventurers

CRA Adventurers will spend the three-day Labor Day weekend (Aug. 30-Sept. 1) camping, hiking, and fishing in the High Sierra wilderness about 350 miles north of San Diego.

Most of the members plan to arrive at the Onion Valley public campgrounds, 15 miles from Independence, about midnight Aug. 29 and spend the night there.

After breakfast Saturday, the Adventurers will leave at 9 a.m. and hike four miles to the weekend campsite at 10,500-foot elevation.

Short excursion hikes and fishing are planned during the afternoon. A hike to Kearsarge Pass is scheduled Sunday.

Joe and Kay Quijada will be trip leaders with Dick Bowen assisting.

Warm days, cool nights, and possible afternoon thundershowers are expected in the camp area. Those making the trip are advised to bring some type of rain protection.

Convair Linksmen Sweep Team Events

Convair Management Club golfers hosted their Lockheed Aircraft counterparts in a match play tournament Aug. 9 at San Diego's Carlton Oaks links.

Convair swept team events competition and individual performances were split.

Individual results were:

Low Gross—Russ Osgood-Convair; Roger Cain-Lockheed; Ken Eastlin-Convair.

Low Net—E. O. Skidmore, Don Bunch, and Don Mullin-Lockheed.

Blind Bogey—Bill Whitley-Convair; Dave Murphy-Lockheed.

Shaffer to Preside At Systems Meeting

San Diego chapter of Association for Systems Management's Sept. 3 meeting will feature a program introduced by Convair's Ralph Shaffer, methods and procedures supervisor.

Meeting is slated for Town & Country Hotel with happy hour at 5:45, dinner at 6:45 and business and program at 8 p.m.

For reservations call Mia North, 239-0811 by Aug. 29.

Cyclists Plan Ride Along San Diego Bay

CRA Bicycle Club members will take a 50-mile ride around San Diego bay beginning at 7:30 a.m. Saturday (Aug. 23).

Ride leader will be Cy Campbell. Riders will meet in the parking lot behind the Spreckels Organ pavilion in Balboa Park.

LF CRIB HOURS

New hours for safety crib at LF plant on Thursday afternoons are 3:30-5 p.m. rather than as inadvertently reported in GD/NEWS, August 6, 1969.

'Mayan' Slide Show Set by Adventurers

"Seven Thousand Miles in Mayan Country," a 60-minute color slide show photographed and narrated by John C. Hooper, a Convair design draftsman and amateur archaeologist, will be presented by the CRA Adventurers Club at 7:30 tonight (Aug. 20) in the CRA Clubhouse auditorium.

Hooper, accompanied by Mexican archaeologists and wild animal collectors, made the slides during a 7,000-mile trip over back roads and trails in Guatemala and Yucatan to reach 12 hard-to-get-to archaeological sites.

The slides will show remains of several ancient cultures including Mixtec, Zapotec, Mayan, Olmec, and Tontonac.

Employes' Art Show Planned Sept. 12-13

CRA will sponsor an art show Sept. 12-13 at CRA Clubhouse.

Entries must be submitted Sept. 5 and judging will be Sept. 6. Categories include paintings, drawings, sculpture, and collages.

Rules for the contest are available at all CRA and employe benefits outlets. For information call Karen Rose, ext. 1111 KM.

Mgt. Club Offers Ice Follies Tickets

Convair Management Club has obtained a limited number of reduced-price tickets for the 8:30 p.m. Sept. 4 (Thursday) performance of the Ice Follies at San Diego International Sports Arena.

Price is $4 and $3 (a $1 saving for each). Tickets may be obtained from Vonda Fusco at the LF Bldg. 16 employe benefits office, Barbara Freeman at the LF Bldg. 5 vendor office, or Jacquelyn Ridley, KM Bldg. 1, 4th floor, Col. D-9.



ETR AWARD—Orion Reed, ETR base manager, third right, and his staff display Convair Sustained Craftsmanship Performance Aawrd for "sustaining performance and meeting quality objectives." From left, R. D. Beasley, T. C. Chitty, Q. E. Gilmore, Reed, Dan Sarokon and J. N. Freeman.

Skating Club's Trip to Big Bear Will Be Last 'Weekend Fling'

CRA Ice Skating Club's annual autumn weekend at Big Bear Lake has been scheduled Sept. 12-14 to give members and friends a final "weekend fling" before school opens.

As in previous years, the club has leased the Wawona Lodge, including 10 rooms with private baths for 2 to 5 persons and 18 housekeeping cabins for family groups of up to 12.

Activities available will include swimming in the lodge pool, boating on the lake, hiking, fishing, and horseback riding. The Big Bear ice rink is closed for renovation but the Blue Jay rink at Arrowhead, a 20-mile drive, will be open for skaters.

Bud Davies, commissioner, said no formal program is planned and participants may engage in sports activity or just spend the time lounging.

Furnished meals will include ranch-style breakfasts Saturday and Sunday a poolside buffet luncheon and evening dinner Saturday, and "snacks" from leftovers at noon Sunday.

Individuals and families attending will be responsible for their own transportation. Maps and directions will be provided for those with reservations.

Cost for the weekend, including two nights lodging and meals, will be $15 per person (double occupancy) with children under eight paying half price.

Reservation forms may be obtained and fees will be accepted at employe benefits offices and the CRA Clubhouse. Reservations close and refunds will not be made after Sept. 5.

For additional information, phone Davies, ext. 3012 KM, Penny Serbousek, ext. 2283, or Joan Kosen, 274-5227 or 453-0530.

All Stars Win Slo-Pitch Title

The Plant 19 All Stars edged the GD/E Super Gnates, 8-6, Aug. 5 to win the CRA Slo-Pitch League softball championship.

In Slo-Pitch summer competition, DatagraphiX had won second half honors in the Tuesday league with a 5-0 record but were shut out by the first half leaders, the Super Gnates, in a 2-0 playoff.

GD/E Bombers were undisputed champions in the Wednesday league and the All Stars in the Thursday league, both with 10 straight victories.

In the playoffs, the All Stars eliminated the Bombers, 8-4, then downed the Gnates for the championship.

Horseback Riders Switch to Hayride

CRA Riding Club will sponsor an evening hayride party for "graduates" of the recently completed beginner horseback riding class.

The party will be at 7 p.m. Aug. 27 at Black Mountain Ranch. There will be refreshments and entertainment after the ride.

Len Sidock, director of the riding classes, said additional classes for beginners and advanced riders will be announced in October. English-style riding classes also will be offered. For information call Sidock, ext. 2173 KM.

Dynamic 8's Fete 40 Aussie Dancers

Forty Australian square dancers attended CRA Dynamic Eights dinner and dance July 19 in CRA auditorium.

The visitors, hailing from Sydney, New South Wales, were greeted by Marty Stutz, club commissioner, and Floyd Reed, club president.

Registration for fall square dance classes will open Sept. 16 for three weeks. For information contact R. J. Collette, ext. 1050 LF or CRA Clubhouse, ext. 1111 KM.

August Golf Tourney Set at Torrey Pines

The August CRA golf tournament will be Aug. 30-31 at the Torrey Pines course.

Greens fee is $3.50 and starting times will be taken beginning today (Aug. 20). Reservations can be made by calling Del Dimmitt, ext. 511 LF.

Bowlers Roll In Seven Loops

Seven CRA winter bowling leagues will begin play the first week in September in four area bowls.

Leagues, bowling nights, and league coordinators and their phone numbers are:

Management-825 scratch, Monday, Clairemont Bowl; Harry Lund, ext. 2144 LF.

Management-825 scratch, Monday, Parkway Bowl; Buzz Prettyman, ext. 3385 KM.

Mixed foursome, Tuesday, Clairemont Bowl; Ray Merritt, ext. 2871 KM.

Management-mixed foursome, Tuesday, Parkway Bowl; Don Evanson, ext. 3213 KM.

Engineering-mixed foursome, Thursday, Pacific Beach Bowl; Sam Catalano, ext. 2052 KM.

Mixed Trio, Friday, Pacific Recreation; Mike Brooks, 469-8793.

Men's Trio, Friday, Pacific Recreation; Brooks.

Meetings for individuals and captains of teams planning to participate are being held at 7 p.m. on respective league bowling nights this week. Information can be obtained by calling coordinators for the leagues. Jim Hayman and Brooks are CRA bowling commissioners.

Russ Frazier Wins In Expert Class

CRA Pistol Club marksman Russ Frazier swept expert class competition, scoring 275-3x in Aug. 10 matches at police pistol range. He was followed by Dick Sutton with 270-6x.

Other match results were: Masters—Don O'Brien, 292-8x; Jim Halfacre, 280-7x; Center Fire .45 cal. — O'Brien, 270-5x; Warren Walker, 250-2x; Frazier, 224; Halfacre, 222; Sharpshooter—Bud Robinson, 257-7x; Veronica O'Brien, 181.

Next match is Aug. 24 at 9:15 a.m. at police range.

Linkswomen Plan Sept. 13 Tourney

Distaff golfers Freda Magargal and Georgia Norbutas won first place honors in Flights 1 and 2 in the General Dynamics Women's Golf Club's Aug. 9 tourney on the River Valley course.

Second place honors went to May Dean Schell, Flight 1, and Rose Hubler, Flight 2.

A Sept. 13 tourney at Torrey Pines course is planned.

All GD women golfers are invited to participate. For information, contact Mrs. Magargal, ext. 2933 KM.

Year's Biggest Show Slated by Horsemen

CRA Riding Club will present its biggest horse show of the year—its annual All-Western Equitation Show—Sunday (Aug. 24) in the CRA ring at Missile Park.

Events in 15 classes begin at 8:30 a.m. and will run all day. A drill team performance will be given by junior members of the club.

Spectators are invited and there will be no admission charge. David Watson is club president. His wife, Judy, will be show secretary.

Seismology Methods Put to Work Detecting Tiny Invisible Cracks

Techniques devised to measure earth tremors are being used at Fort Worth division to detect tiny cracks in metal before they can be seen by the human eye.

Dr. Yosio Nakamura, project research scientist in applied research laboratory, has perfected the technique called acoustic emission monitoring.

Dr. Nakamura, a seismologist, used the technique originally to detect minor earth faults. Now the principle is at work in fatigue tests like the one conducted on the F-111 carry-through section.

In these tests, an array of tiny sensors is placed on various areas of the metal. Each sensor is attached to pre-amplifers by a tiny wire. If a crack appears in the metal, part of the energy released is transmitted to the sensors in the form of acoustic waves.

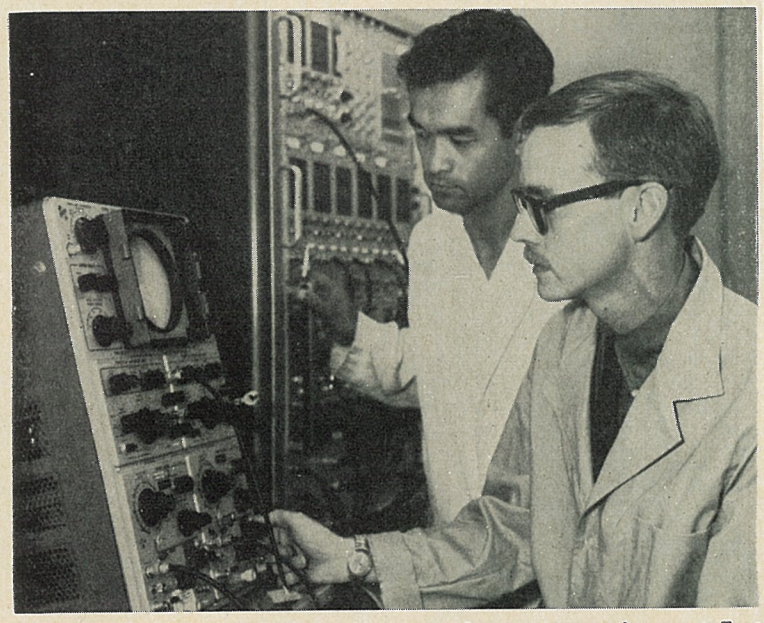
Pre-amplified signals from each array are fed into the acoustic emission monitor, where signals are processed through a series of logic circuits. Test monitors can "view" a profile of the acoustic waves—the break—on an oscilloscope near the monitoring unit.

"An effective spacial and frequency filters combination enables us to use the system even where heavy background noise is encountered," said Dr. Nakamura.

He said the monitor can pick up ultra-sonic sound—the very high frequency range, or about 500,000 vibrations a second. Such sounds cannot normally be heard by either humans or animals.

Main advantages of the system are in being able to detect tiny internal cracks, or cracks in inaccessible places, before they can be seen by the test engineers.

The system is being used currently in certain F-111 tests and is being considered for more extensive tests in the future in cooperation with engineering test laboratory.



"SEEING" SOUND—Acoustic waves from test speciman at Fort Worth division are monitored on acoustic emission monitoring system by Dr. Yosio Nakamura, left, project research engineer in applied research laboratory, and Larry Barrick, test engineer.

Six-Month Financial Report Issued by General Dynamics

General Dynamics Corporation and subsidiaries reported a net loss of $19,372,000, equivalent to $1.84 per share of common stock, for the six-month period ending June 30, 1969. The net loss was caused by the write-off of excess costs of $59,044,000, after taxes, on long-term surface ship and submarine construction contracts. Of this amount $53,144,000 was charged against 1969 earnings and the remainder to a previously established reserve.

Net income for the first six months of 1968 before extraordinary items was $24,929,000, equivalent to $2.38 per share of common stock. In addition, the Company recorded a nonrecurring gain during the 1968 second quarter of $8,927,000, equivalent to 85 cents per common share, for the sale of General Atomic division.

Sales for the first six months of 1969 were $1,136,042,000, down from $1,339,056,000 in the corresponding 1968 period.

Roger Lewis, president, said he was encouraged that net income from the company's other activities had held at a satisfactory level, with net earnings during the first half of 1969, amounting to $33,772,000, or $3.20 per share, before losses on long-term marine construction contracts and extraordinary items. This, compared with net earnings for the first half of 1968 of $34,474,000, or $3.29 per share, before marine charges and extraordinary items. During the full year 1968 net income before nonrecurring profits and marine charges of $41,875,000 was $71,631,000, equivalent to $6.81 per share. The comparable earnings for 1967 before nonrecurring profits and marine charges of $18,646,000 were $69,935,000, or $6.70 per share.

Lewis said that a small portion of the additional charges **was incurred on submarine contracts** in the Electric Boat division. He added, "modest profits are anticipated at this division in 1969 in spite of the current charges. Electric Boat has a large backlog of submarine construction and overhaul work, and we expect results in the future to be satisfactory."

In commenting on the write-offs at the Quincy division, Lewis referred to the detailed explanation of the problems at Quincy which accompanied the first quarter report to share owners. He said that in the last three months, with the assistance of outside consultants, the situation has been reviewed and re-evaluated and that it has now become apparent that the previously estimated costs to complete the work in progress will be greatly exceeded.

Lewis said most of the charges were related to Naval surface ship construction. He said, "in the start-up years of 1965-1967 at Quincy when ship pricing was extremely competitive we contracted to build 14 large Naval surface ships, two ammunition ships (AEs), six fleet replenishment ships (AORs), two submarine tenders (ASs) and four landing ships (LSDs). These were all new designs which, superimposed upon the normal start-up problems, confronted the division with a series of severe and costly difficulties associated with first-of-a-kind design and construction. However, we have now delivered the two ammunition ships and the first replenishment ship to the Navy. The first submarine tender has successfully completed its dock trials and all of these Naval ships are scheduled to be delivered by late 1971.

"Additionally, the last of Quincy's four nuclear submarines was completed and delivered in March of this year. These submarines, two of which were under construction when we acquired the shipyard, had severely impacted operations as a result of schedule stretch-out to incorporate major changes in design.

"Thus with the difficulties associated with yard start-up and the very heavy burdens of the first-of-a-kind construction largely behind us, the strengthened management team, the new systems for production and cost control, and the improved capital facilities, we expect that no further write-offs will be required."

Hustler Trophy Won By 305th Bomb Wing

The 305th Bomb Wing at Grissom AFB, Ind., has won the General Dynamics trophy as the best B-58 Hustler wing.

Given for excellence in a prescribed six-month period, this presentation marks the fifth time the 305th has held the trophy.

Scoring is based in individual wing results on operational readiness inspection tests, on-time take-offs, and other mission requirements.

Savings Plan 'Open' Again This Month For Oct. 1 Changes

Enrollment in General Dynamics Savings and Stock Investment Plan is "open" this month for new members or changes in existing plans.

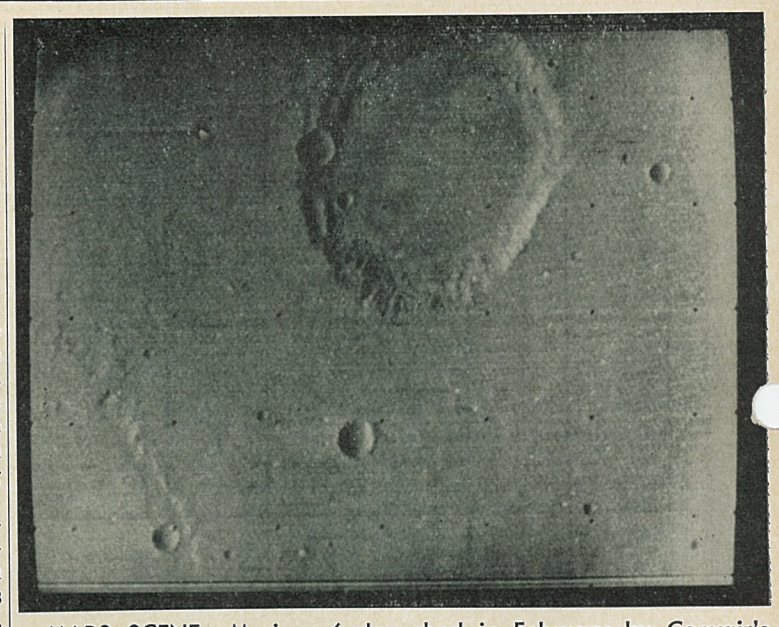
Employes who have established eligibility by being with the Company a full year, can sign during August for membership to be effective for the quarter beginning Oct. 1. Enrollment dates correspond with the beginning of calendar quarters, i.e., Jan. 1, April 1, July 1, and Oct. 1, and application must be made at least 30 days in advance of these enrollment dates.

Present members of the Plan wishing to either change their investment option or percentage of savings, can also make application this month. Forms and additional information are available at employe services.

Military Men Train With Canadair Drone

Seventy-five military officers and men from Canada, the United Kingdom, and the Federal Republic of Germany were at Canadair Ltd. in June and July for training with the Canadair AN/USD-501 surveillance drone system.

Developed as a company private venture, the AN/USD-501 is a rocket-takeoff, jet-powered surveillance vehicle that travels near the speed of sound and has twin 70-mm cameras mounted in its belly.



MARS SCENE—Mariner 6, launched in February by Convair's Atlas-Centaur 20, returned photos of craters on Mars surface on its flyby July 30. This photo, snapped 2,300 miles from planet's surface, shows a 48 x 63-mile area. Large crater is about 24 miles across.

15-Month Manned Trip To Mars Feasible in '84

A manned mission to Mars is feasible, and the first favorable date for takeoff on the projected 461-day journey is Feb. 10, 1984.

The timetable was set in a manned-mission-to-Mars study by Fort Worth division's advanced missile and space systems group.

The mission would be carried out in a multi-stage spacecraft which stretches to 470 feet and weighs 2.1 million pounds. It would take six months to assemble the nuclear-powered behemoth in space.

"An assembly crew would spend about six months in orbit putting the spacecraft together," said Dr. M. A. Frost, senior design engineer. "Once assembled, a six-man crew would be sent up to carry out the mission."

Frost said the Mars crewmen might have 100 times as much space to work in as the three astronauts had on Apollo 11.

The 1984 departure date was selected because the earth will be closest to Mars at the time—about 60 million miles—and other conditions for the mission will be more favorable. Next favorable launch dates are 1986 and 1988, and after that the year 2,000.

The spacecraft's flight path would be elliptical, making the overall journey half a billion miles. The trip to Mars would take 194 days, while the longer return journey would require 227 days.

The study calls for a 40-day stay on Mars. During that time, crew members would explore the planet, take photographs and acquire soil and atmospheric samples.

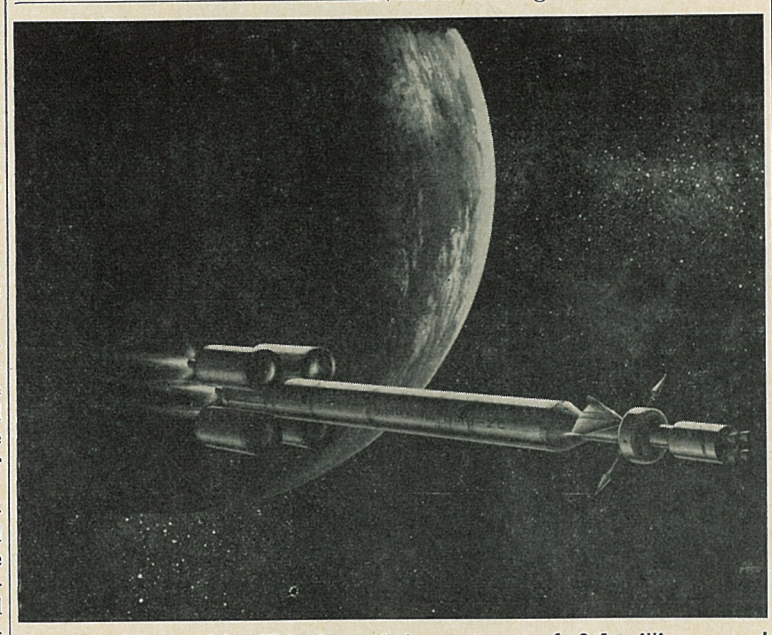
Frost said the journey would require breakthroughs in life control systems and protective devices from solar storms and micro-meteroids. Navigation and guidance systems of unprecedented accuracy—far more accurate than those required for the moon landing—would be needed.

"Psychological problems must be understood, too," Frost said. "The crew must be highly self-reliant. For example, in an emergency it would take six minutes to relay a message from the spacecraft in the vicinity of Mars to earth, six more minutes to receive a reply."

Why a manned trip to Mars? "We explore other bodies in the solar system to seek, within their environments, the solutions to the great mysteries of the universe—the origin of the stars and planets and the origin of life," Dr. Frost said.

"Because of the apparent uniqueness of each of the heavenly bodies," he said, "it is highly unlikely that an 'earth man' can predict, based on his earthly knowledge, all that could be found elsewhere in the universe. The basic formula for life itself may be different."

He said the purpose of manned spacecraft explorations is to search for the unknowns, while unmanned probes only can explore the "knowns."



MAN TO MARS—This is artist's concept of 2.1-million-pound spacecraft which could carry six-man crew on 461-day trip to Mars. Craft would be launched by 10 Saturn V boosters and assembled in earth orbit over six-month period. Drawing is by George A. Grant.

ADC Nominates F-106 Squadron

A Korean-based squadron of Convair-built F-106s has been nominated by Aerospace Defense Command (ADC) for the annual Hughes Trophy.

The Fighter Pilots Association award is given annually to the top interceptor squadron in ADC and air forces in Europe, Pacific and Alaska.

The 71st FIS was nominated for actions in South Korea last April after a Navy EC-121 reconnaissance plane was downed by Communist MIGs.

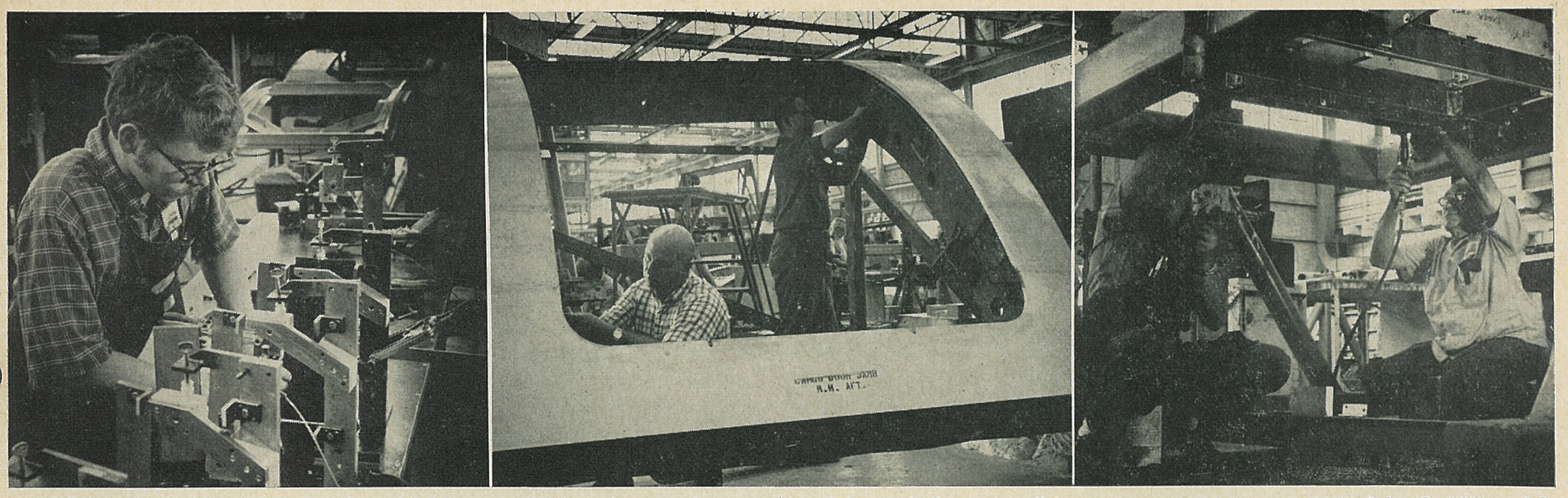
Within hours after arrival at Osan air base the 71st "scrambled" to identify unknown aircraft operating in the Sea of Japan. The squadron continued to patrol the skies following the Navy plane's disappearance.

Lt. Gen. O'Neill Moving to AFSC

Lt. Gen. John W. O'Neill, commander of the Air Force Space and Missile Systems Organization (SAMSO), will become vice commander of the Air Force Systems Command effective Sept. 1.

He will be succeeded at SAMSO by Lt. Gen. Samuel C. Phillips, director of the Apollo lunar program since 1964.

ENGINEERING
partner in rebuilding urban america



DOOR CONSTRUCTION—Tooling for DC-10 fuselage doors is shown under construction at Lindbergh Field plant. At left is Steve Blomquist, jig builder, attaching locators to "metal blueprint." Center: Conrad Bley, left, and Robert R. Lang, jig and fixture builders, install locators on master gage tool. At right: Carl West, left, and T. R. Blake, jig and fixture builders, mount contour formers for first sequence assembly fixture for air-conditioning door.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 17 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, September 3, 1969

Convair to Manufacture 4,800 DC-10 Door Sets

Tooling is being completed at Convair's Lindbergh Field plant for manufacture of doors and jambs for the DC-10 fuselage, an important phase of the tri-jet-liner program.

Sixteen door and jamb sets — including three cargo, six passenger, three air conditioning and four nosewheel doors — make up each fuselage shipset.

Door/jamb sets are produced following the same basic steps from design to delivery as other major fuselage components. After receiving basic designs from design engineers, production engineering departments begin manufacturing planning and tool design. Tool manufacturing departments then fabricate tools and fixtures necessary for production.

Included in door/jamb tooling operations are master gages or reference tools which are used to maintain contours and attach points for door production. The gages insure proper door to jamb fit and integrity of assembly on each shipset.

Completed doors will be installed in fuselage sections during final assembly steps — two-thirds and full barrel stages.

Jambs will become an integral part of the basic fuselage structure and join the production line

(Continued on Page 2)

V/STOL Market Mgr. Appointed

Thomas M. Sullivan, marketing director for vertical and short takeoff, landing (V/STOL) aircraft for Canadair since 1964, has been appointed manager of military V/STOL aircraft requirements for Convair.

He reports to Lyman C. Josephs, director of advanced systems, and will maintain liaison with the military services to keep abreast of requirements for V/STOL aircraft and keep the services informed on Convair's activities in the field.



T. M. Sullivan

Sullivan was with Thompson Ramo Wooldridge as marketing manager for undersea warfare systems from 1960 to 1964 and previously served 18 years with Fairchild Engine and Airplane Corp. as manager of field

(Continued on Page 2)



"MASCOT" — Wearing "Fair Share" emblem on her badge and as an earring, Annette Barwick, Dept. 100-1 secretary, displays campaign literature for upcoming Con-Trib-Club drive.

'Fair Share' Stressed In Con-Trib Drive

The annual membership drive of Convair Employes' Con-Trib-Club begins Monday, Sept. 8.

Campaign emphasis will be on giving a "Fair Share" for support of health, service and character activities of the community.

A "Fair Share" is the equivalent of four minutes per day or 8/10ths of one per cent of pay. It is given through payroll deduction.

General Manager Jack L. Bowers, who will serve as campaign chairman, said the "Fair Share" method enables each employe to contribute an equitable amount based on his earnings, permits automatic modification of the donation if earnings change and eliminates the need for the individual to renew his membership each year.

Bowers emphasized his personal interest in the campaign and urged all employes to sign up for a "Fair Share."

Con-Trib-Club donates money to orphanages, homes for retarded children, various church and service agencies for neighborhood youth activities and summer camps, Family Service, serviceman's centers and through its pledge to the United Community Service it donates to the 65 nonprofit health and social agencies that work through the United Crusade.

During the campaign, department campaign coordinators un-

(Continued on Page 2)

Convair Awarded Study Involving Space Station

Convair has received a $400,000 contract from the NASA Marshall Space Flight Center to study experimental modules for use with a proposed manned space station.

The eight-month study will complement investigations now being carried out to support NASA plans for a permanent orbital space station in the mid-1970s.

For this study, the space station (not yet an approved project) will be projected as being launched in 1975 and having a minimum operational life of 10 years.

Convair first will consider experiments suitable for the station. These include astronomy, space physics, engineering and operations, earth observations, biomedicine and biotechnology, space biology, advanced technology, and materials processing.

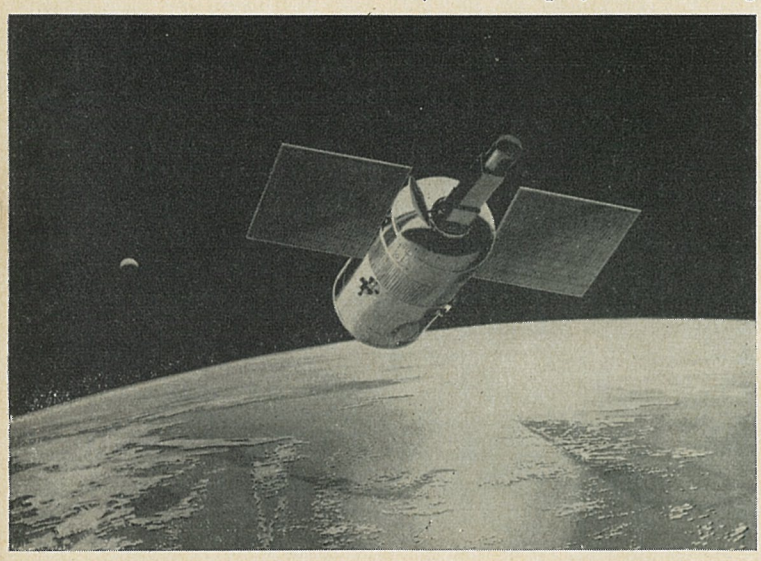
After these experiment groupings are further defined, Convair will develop preliminary module concepts, perform a commonality analysis on these concepts, develop preliminary design and cost analysis for each approved module concept, and make a proposed plan and schedule for fabrication.

As seen now the experimental module is, in essence, a separately launched spacecraft, possibly a short cylinder, housing experiment equipment related to a particular scientific discipline or area of advanced technology.

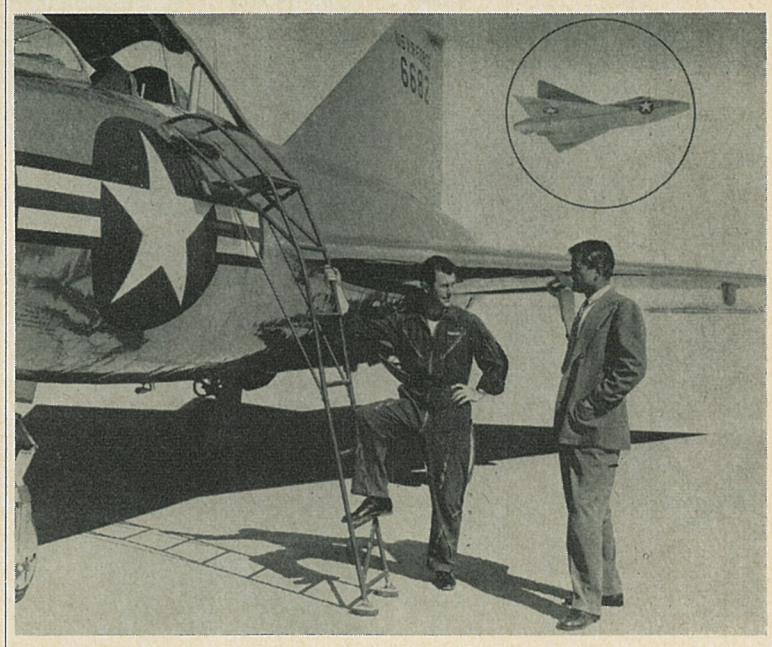
Use of the experiment modules would add flexibility to the space station program. Launch of the station would not be tied to availability of advanced experiment equipment. Later changes, once the station is in orbit, could be introduced with a minimum of alteration to the station.

The experiment modules could be attached to the station or could free-fly close by, with oc-

(Continued on Page 2)



MODULE—Artist's conception of an experiments module as it would look in space with solar panels deployed.



MEMORIES?—Convair's Sam Shannon, who took XF-92A on first flight, chats with Charles Yeager, AF test pilot, in 1948 photo taken at Muroc Dry Lake (now Edwards AFB). Circled is inset photo of XF-92A in flight.

Trail Blazer

XF-92A, First Delta-Wing Plane, Shifts to Air Force Museum

The Convair-built XF-92A, world's first delta-wing airplane, was moved to the Air Force Museum at Wright-Patterson AFB, Ohio, last month after being displayed 10 years at The University of the South in Sewanee, Tenn.

Previously, the Air Force research interceptor had served as a traveling exhibit since making its last flight in 1953.

Sometimes called the "flying triangle," the XF-92A was the forerunner of Convair's F-102 and F-106 and of other delta-wing craft produced around the world.

Development of the XF-92A began in 1945 when the Air Force asked Convair to design a high performance interceptor and Adolph Burnstein, then chief design engineer, suggested use of the delta wing.

The Air Force "bought" the

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Sept. 1 and Sept. 15.

Thirty-year: Dept. 015, V. J. Rocco; 401, T. Allison; 532, H. W. Callihan; 951, D. G. Clark.

Twenty-five-year: Dept. 015, B. N. Waite; 130, T. G. Champlin; 149, R. R. Reinagel.

Twenty-year: Dept. 015, E. W. Carter; 250, A. R. Dyer; 400, T. O. Patterson; 518, Armida C. Marshall; 524, Maxine R. Binion; 583, Joe C. Ramsey.

Fifteen-year: Dept. 142, F. S. Piper; 149, R. D. Murphy; 193, J. G. Fielder; 400, W. E. Jones, W. G. Martin, F. J. Quinten; 401, J. H. Athey; 420, C. F. Devin; 561, R. C. Hinck; 566, R. F. Lundberg; 572, W. E. Witzell; 574, E. C. Strehlau; 953, J. B. Skibinski.

Ten-year: Dept. 031, Virginia M. Stewart; 058, J. W. Day; 059, J. F. Christeleit; 149, K. E. Taylor; 170, C. Cobb; 250, R. T. Collins, L. J. Elfers, C. E. Simpson; 401, G. B. Cox; 403, W. W. Wellnitz; 515, Beverly J. Kinzie; 517, Conchita K. Martin; 518, V. Derkach; 524, Nellie A. Kutscher, Alberta T. Purdue; 533, H. F. Heist Jr.; 541, L. Clough; 596, J. H. Miller Jr.; 756 G. C. De Mos; 780, D. L. Kinshella, G. Pommerenke; 831, C. T. Lograsso; 951, F. E. Nickerson; 952, A. L. Schuler; 964, Helen L. Spann; 966, R. E. Carlson; 967, J. E. Raynoha; 985, C. J. Bush, D. T. Kreiss; 989, H. O. Eastman III; 999, G. D. Hall.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Aug. 15.

Dept. 015, M. A. Ambrose, $34.30; 059, T. T. Austin, $40.70; 401, A. L. Bishop Jr., $15; 507, R. L. Black, $15; 027, W. E. Essington, $63.80 (two awards); 401, R. A. Golem, $35 (two awards); 059, F. H. Harding, $99.40; 574, J. S. Jacobsen, $57.60; 002, C. W. Johnson, $15; 027, J. P. Kany, $45.60; 574, K. R. Krebs, $248.60; 019, R. Lucero, $15; 508, B. Maddow, $84.70.

Dept. 565, E. V. Manfield, $5,000; 015, W. L. McCollum, $30; 016, A. V. Minor, $71.70; 015, M. T. Musgrove, $40.80; 336, F. Newton, $15; 059, G. Olcott, $138.20; 519, K. W. Overfield, $92.80; 059, G. S. Raney, $35.90; 170, J. M. Roberts, $263.10; 149, G. Rubalcava, $15; 401, A. S. Stebbins, $108.80; 250, W. T. Toon, $20; 985, C. E. Vickers, $15; 019, D. R. Wilson, $15.70; 027, E. J. Woods, $33.60; 027, E. E. Yturralde, $15.

Employe Suggestion awards approved for the week ending Aug. 22.

Dept. 031, S. B. Ames, $15; D. G. Anderson, H. Flemming, $62.10 each (joint award); 144, J. A. Bender, $19.80; 149, L. A. Brugger, $15; 027, F. E. Bordenkircher, L. W. Howerton, $12.50 each (joint award); 027, B. D. Bybee, $64.10; 027, R. G. Castro, $89.20; 027, R. E. Cloud, $45.50; 143, A. M. Contreras, $74.50; 027, C. H. Cooper, $64.10; 020, C. Costantino, $15; 985, R. L. Davis, $15; 143, J. Doyle, $85.10; 027, M. J. Estes, E. E. Yturralde, $12.50 each (joint award); 840, L. R. Fogerty, $44.30; 836, R. H. Ford, $15; 027, J. P. Gage, $25; 519, C. Greve Jr., $19.40; 579, A. W. Hamrick, $25; 020, R. Hansen, $15.

Dept. 131, R. B. Hashberger, $15; 979, J. T. Hazelgrove, $25; 780, R. M. Hinchman, $15; 401, B. F. Hull, $19.10; 401, J. R. Leadaman, $43.50; 045, M. M. Lopez, $52.30; 027, J. Mejia, $15; 250, O. A. Mereon, $50; 059, D. J. Olson, $19.70; 144, M. H. Parrish, $15; 780, F. Puchahes, $15; 142, J. W. Quijada, $99.20; 541, A. Sansone, $15; 840, K. L. Sellers, $15; 578, T. L. Stalcup, $46; 002, A. Stieringer, $20.75; 572, H. R. Stone, $15; 840, G. A. Van Hoose, $43.60; 401, C. B. West, $37.50; 027, J. H. Wines, $36.70; 149, S. Witkoff, $20.75; 840, A. L. Wolfe, $35.90; 027, E. E. Yturralde, $15.

Personals

CONVAIR

We wish to thank you for your kindness and concern during the recent illness and passing of our loved one, Bill Daenzer.

Jean and
Debra Daenzer

* * *

We wish to express our thanks to the Convair employes who donated blood for our son, Michael, during his illness.

Mr. and Mrs. William C. Hovey
Dept. 149

* * *

I wish to thank all my Convair friends for the flowers and kind expressions of sympathy received on the death of my son Larry. Your thoughts were most gratifying.

Raymond K. Davis
Dept. 059-4—Plant 19

Retirements

CONVAIR

ABRAMS — Chesley W., Dept. 985-1. Seniority date Nov. 25, 1958, retired July 28.

CIPRIAN—Frances E., Dept. 780-1. Seniority date Nov. 5, 1947, retired Aug. 14.

EPLER—James E., Dept. 250-3. Seniority date Nov. 26, 1952, retired Aug. 6.

GREENLEE—Robert A., Dept. 731-0. Seniority date Aug. 11, 1953, retired Aug. 22.

MERKOWITZ — Samuel, Dept. 532-0. Seniority date Nov. 26, 1940 retired Aug. 15.

ROGERS — William E., Dept. 131-0. Seniority date Nov. 29, 1955, retired Aug. 18.

WITT—Raymond L., Dept. 761-0. Seniority date Oct. 3, 1951, retired Aug. 19.

Papers Presented

CONVAIR

BENNETT—F. O., K. M. KNEISEL, Dept. 584. "Prediction of Interstitial Pressure in a Multilayer Insulation During Rapid Evacuation." AIAA/Thermophysics Conference, San Francisco, Calif., June 16-18.

DEVEREUX—R. F., Dept. 506. "Long Range Telemetering of Oceanographic Data for the North Pacific Study." IEEE/Meeting on Communications, Boulder, Colo., June 9-11.

EVANS—E. A., Dept. 584. "Thermal Acoustic Resonance in Two-Phase Single Component Choked Flow." 1969 Cryogenic Engineering Conference, Los Angeles, Calif. June 16-18.

HERSH—M. S. Dept. 572. "Fracture Modes of Aluminum-Boron Composite Joint Test Specimen." Institute for Composite Materials Symposium, Rolla, Missouri, June 2-4.

KUCHTA—B. J., Dept. 585. "Aerodynamics and Flight Characteristics of Several Variable Geometry Entry Spacecraft During Subsonic Wing Deployment and Landing." CASI-AIAA Subsonic Aero- and Hydro-Dynamics Meeting, Ottawa, Canada, July 2-3.

MERTEL—H. K., Dept. 542. "Quantitative Evaluation of Electromagnetic Compatibility Programs." IEEE/National Symposium on EMC, Ashbury Park, N. Y., June 17-19.

OESTERLE—D. S., Dept. 584. "Ice Crystal Induced Compressor Stall in the F-102." Air Force Aero Propulsion Lab/Airframes-Propulsion Compatibility Symposium, Miami Beach, Fla., June 24-26.

ROL—P. K., Dept. 596. "Reactions of Na and K With Some Atmospheric Ions." DASA Symposium on Physics and Chemistry of the Upper Atmosphere, Menlo Park, Calif., June 24-25.

Papers presented at the American Astronautical Society/15th Annual Meeting, Denver, Colo., June 17-20.

GREENSITE—A. L., Dept. 585. "Problems of Abort from Manned Spacecraft."

DOWNING—M., H. A. MITCHELL, Dept. 585. "Deployment Latch Up Dynamics of an Erectable Truss Antenna."

DROWNS—R. E., Dept. 952. "Automation of Launch Vehicle Adaptive Costing in Support of Long Range Planning."

NAU—R. A., Dept. 581. "Low-Cost Round Trip Space Transportation Evolution."

STEPHENS—P. B., Dept. 584. "Thermodynamic Considerations Affecting Post Boost Vehicle Propulsion."

VAUGHAN—D. H., Dept. 512. "Large Space Erectable Structures."

WRENCH—E. H., A. L. GREENSITE, Dept. 596. "EVA Stabilization Shoes."

Papers presented at the AIAA/5th Propulsion Joint Specialist Converence, Colorado Springs, Colo., June 9-13.

BRADSHAW—R. D., T. J. CHANDIK, A. B. WALBURN, Dept. 584, "Hydrogen Vent Thrusting for the Safe Disposition of an Aborted Nuclear Stage."

PETERS—C. F., Dept. 952. "Defining the Optimum High Energy Advanced Maneuvering Propulsion System."

Papers presented at the Internation Conference on the Physics of Electronics and Atomic Collisions, Cambridge, Mass., July 28-Aug. 2.

ROL — P. K., Dept. 596. "Merging Beams of Some Charged Rearrangement Studies."

ROTHE—E. W., Dept. 596. "Relative Cross Section for Cs Production from Cs Br from Threshold to eV."

Deaths

CONVAIR

DILLINGER—Philip, retired Dec. 28, 1956, Dept. 31, died Aug. 12. Survived by his wife, Josephine.

HANSEN—Grant D., retired June 30, 1967, died July 24. Survived by his wife, Nola.

LOMELI—Crispin M., Dept. 733-0, died Aug. 21. Survivors include wife Lydia, daughter Elizabeth, son David.

NELSON—Artes R., retired June 22, 1962, Dept. 14-4, died July 27. Survived by his son-in-law, Tommy Steider.

SCHALLER—Lee L., retired Feb. 28, 1969, Dept. 551-4, died Aug. 17. Survived by his wife, Mary.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Convair Will Build 4,800 DC-10 Sets

(Continued from Page 1)

at the one-third panel assembly level.

Convair ultimately will produce 4,800 door/jamb sets for the 300 tri-jetliner fuselages during its five-year McDonnell Douglas subcontract.

Ten door/jamb sets will be included in Convair's first fuselage section delivery scheduled for Nov. 15. Slated for inclusion in sections C and D are two passenger, four nosewheel, one cargo and three air conditioning sets.

V/STOL Marketing Manager Appointed

(Continued from Page 1)

engineering, manager of flight test, and test pilot.

He joined the aircraft industry as a design engineer with Glenn L. Martin Co. in 1939 and previously served as an instructor in aeronautical engineering at Indiana Institute of Technology.

Sullivan holds an aeronautical engineering degree from the University of Detroit.

SLIDES ON SALE ON MOON LANDING

Slides of the Apollo 11 moon landing mission are on sale at Convair employe benefits outlets. The $3.15 package contains 20 35mm color slides.

'Fair Share' Goal In Con-Trib Drive Beginning Monday

(Continued from Page 1)

der Fire Chief Del Dimmitt will pass out Con-Trib-Club authorization cards to employes who are not now signed up for the "Fair Share" plan.

Brochures describing the United Community Services, which will be conducting a drive in the community at large at the same time, will be handed out along with pamphlets describing Con-Trib-Club.

Employes contributing to the club under the "Fair Share" plan will receive a gold "check-off" pin which they can wear and a decal for their homes to let people know they have given their "Fair Share."

Con-Trib money is administered by a 14-member employe committee, appointed jointly by management and employe-representative labor organizations.

Since 1952 the Con-Trib-Club has distributed $7,583,627 to various charities and $814,100 in Emergency Aid to Convair employes in 4,776 cases.

Charity disbursements include $334,365 to youth activities, $1,248,529 to health agencies and $4,592,025 to the United Community Services of San Diego.

Convair Employe's Con-Trib-Club made disbursements totaling $7,193 during August.

Of the sum, $2,500 was given to International Guiding Eyes, Inc.; $1,500 to the City Rescue Mission; $1,500 to Neighborhood House; $1,000 to Homemaker Service of San Diego-North County Branch; $603 to the Young Men's Christian Association (YMCA).

Convair Wins Space Study

(Continued from Page 1)

casional docking if operational requirements demand.

The commonality analysis to which the module concept will be subjected will answer the question "What is the minimum number of standardized or common modules which will fully support the experiment program at minimum cost?"

Convair is expected to study 30 or 40 concepts then select three or four multi-purpose modules.

These modules will be subjected to more preliminary design and analysis and figures for future program costs will be derived. Final results will help NASA shape its future manned space program by showing feasibility and cost of experiment modules for use in support of its projected program of space research.

The study is being carried out under W. W. Withee, Dept. 500-0, director of earth orbital systems, with D. J. Powell, Dept. 501-1, as study manager.

XF-92A Transfers To Air Museum

(Continued from Page 1)

concept based on wind tunnel model tests and contracted for completion of the research craft in the shortest possible time and with parts from other airplanes being used where possible.

Construction began at Vultee Field and was completed at Lindbergh Field with parts from at least five other aircraft being utilized.

Ellis D. "Sam" Shannon, then Convair's chief test pilot and now engineering flight test manager, was at the controls for the XF-92A's first flight Sept. 18, 1948, at Muroc (now Edwards AFB).

The XF-92A logged more than 100 flights, many of them with Air Force test pilots "Chuck" Yeager and "Pete" Everest at the controls. It exceeded the speed of sound once — when Yeager flipped it on its back and pulled four Gs in a vertical power dive.



ZERO DEFECTS HONOR—D. C. Prim, Electronics-SD operations manager, second from left, receives DOD award for Zero Defects program participation from Col. Charles F. Merz, DCAS San Diego district commander. Others, from left, are R. H. Nicholson, Electronics-SD manager of quality control; Hal George, DCAS quality assurance representative at Electronics-SD; Wendell K. Wilkinson, chief of quality assurance division, DCAS-SD; Fred Haverlandt, chief of operations branch, DCAS-SD.

First ZD Award of Kind in Area Received by Electronics-SD

Electronics-SD operations has been awarded a Zero Defects program "participation award" from the Department of Defense, the first of its kind for an electronics firm in the San Diego-Imperial counties area.

D. C. Prim, Electronics-SD manager, received the award from Col. Charles F. Merz, commander of Defense Contract Administration Services (DCAS) San Diego district, in ceremonies last month.

A letter of commendation from Capt. Norman D. Champlin, USN, commander of the DCAS southwest region, accompanied the award plaque.

Prim, in accepting the award, pledged Electronics-SD's continued support of the Zero Defects program.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—If I decide to retire early, how long would I have to wait before receiving my funds from the Savings and Stock Investment Plan, and would I receive all of the company contributions?

A—Upon either early or normal retirement, you will receive both your contribution and the full company contribution in two to three months. Payment is in cash, or in the case of General Dynamics stock, in stock certificates.

★ ★ ★

Q—The Con-Trib-Club drive is about to begin again, and many of my women employes, whose husbands also work at Convair, feel that one donation per family is enough.

A—Each of us is asked to give only from his own earnings under the sliding "Fair Share" concept. Otherwise, the single income family is penalized. Women as well as men have a stake in Convair and the community.

★ ★ ★

Q—Could we get the U.S. Post Office to pick up mail at the box just outside KM Bldg. 26 at 8 a.m., rather than at noon? This would make one-day delivery possible.

A—The Post Office Department states that all mail picked up from street boxes is delivered the following day, unless it is sent to a local Post Office Box or is marked for Special Delivery. Thus, changing the hour of pickup would not speed up delivery, and also would cut back service for those who mail after 8 a.m.

★ ★ ★

Q—Convair Management Club tours (such as the one to the General Motors assembly plant at Southgate) are of interest to many of us, but the non-member tickets are taken up so quickly that hourly don't often get a chance. Could CRA arrange such tours?

A—CRA feels that it would be inappropriate to sponsor such tours, as the CRA charter is restricted to recreational activities and these tours are considered more educational than recreational. However, the matter has been discussed with the Management Club and the tour chairman is considering the possibility of making more space available for non-members.

★ ★ ★

Q—Each time our metal wastebaskets are emptied they become more dilapidated. How about replacing them with plastic containers?

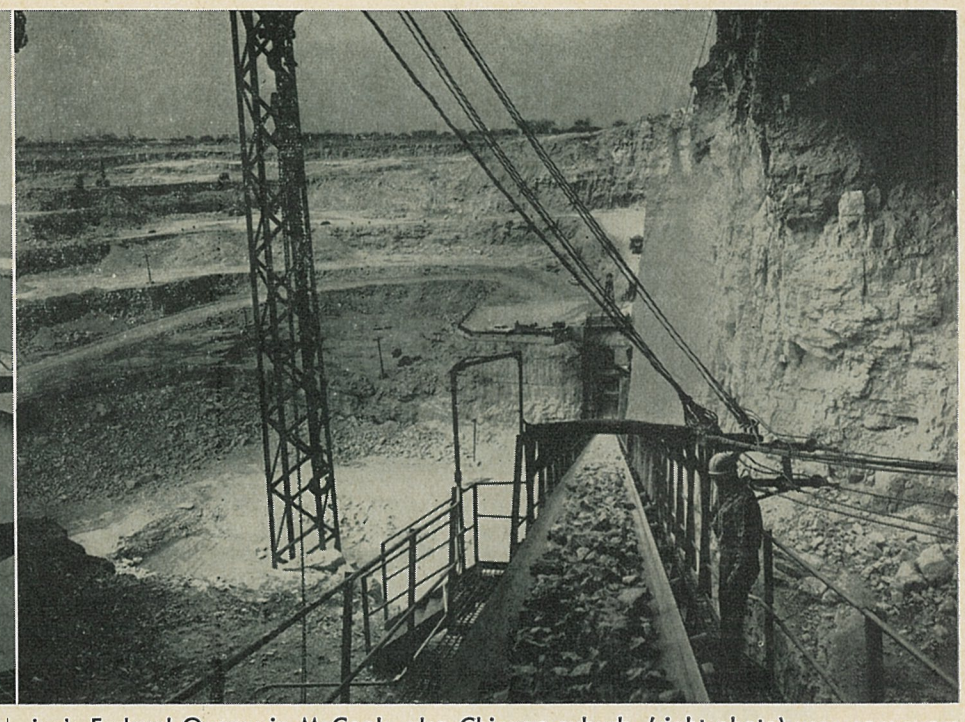
A—Perhaps not plastic, but maintenance will see that you have baskets in good condition. Call LF 477 or KM 2601.

★ ★ ★

Q—Outside lunch tables are frequently messy. Who is in charge of keeping them clean?

A—It depends upon their location as to what function is responsible. However, a plan is being developed to fix responsibility upon maintenance or concessionaires to see that tables are kept clean.





ILLINOIS PLANTS—Marblehead Lime's plant in Chicago suburb of Thornton, (left photo) produces dolomite lime, used extensively by steel industry. Material Service's Federal Quarry in McCook, also Chicago suburb, (right photo) uses conveyors to carry stone from quarry floor to processing plant.

Material Service Has Record Sales

(These articles conclude a series on firms that make up the General Dynamics Resources Group. Group's two coal producing firms, Freeman Coal Mining Corp. and The United Electric Coal Companies, were highlighted in Aug. 20 GD/NEWS issues.)

Material Service Corporation is one of the world's largest producers of "redi-mix" concrete and construction aggregates.

Since 1919 Material Service has quarried, processed and delivered sand, gravel, stone, redi-mix concrete, and other building materials to the Chicago area construction industry.

Numerous large aggregate producing operations are required to meet the demands of both Material Service's redi-mix business and customers outside the company. In 1968 the company sold more than 18 million tons of aggregate, an increase of nearly 2½ million over the previous year.

In the Chicago suburb of Thornton, Material Service operates the largest commercial quarry in the world. A mammoth crusher fed by a conveyor system can produce 2,500 tons of stone an hour. At Morris, Ill., a floating dredge and sand plant built on two converted World War II LSTs (landing ship, tanks) takes sand from a channel of the Illinois River, producing two million tons a year.

In order to keep its quarry operations running smoothly, Material Service uses 70 cranes and power shovels, 32 wheeled loaders, and 48 off-highway trucks. The company operates its own 12-mile railroad to deliver sand and gravel from Plainfield to Lockport, Ill.

A fleet of more than 225 redi-mix trucks operate throughout Chicago, pouring over 1½ million cubic yards of concrete a year. The company furnished all the redi-mix concrete in building many of the city's most impressive structures, such as the John Hancock Building and the twin towers of Marina City.

Redi-mix concrete is a highly perishable product where fast delivery is essential. From the time water comes in contact with the cement, the company normally has about an hour to discharge the concrete at the job site. Material Service, therefore, has its distribution yards strategically located throughout the Chicago area.

Many persons not working directly with the product believe that "all concrete is alike," but this idea is far from true. Different types of concrete vary as much in strength and other characteristics as do different types of steel. Normally, many different types of concrete are used on a major construction project.

Material Service sells redi-mix concrete with strengths ranging from 1,000 to 7,500 pounds per square inch (and is experimenting with 9,000 p.s.i.), using modern, automated equipment to scientifically blend the ingredients.

A well staffed engineering sales group concentrates on new products, systems building (precast, mass-produced housing) and a new post-tensioning system (a system of transmitting force to concrete which increases its carrying capacity).

The location of Material Service's facilities has been a major factor in the company's growth and dominance of the Chicago market. Half of Material Service's distribution yards and aggregate facilities are located on waterways, allowing the firm to use relatively economical barge transportation to ship raw materials to its plants, distribution yards, and customers.

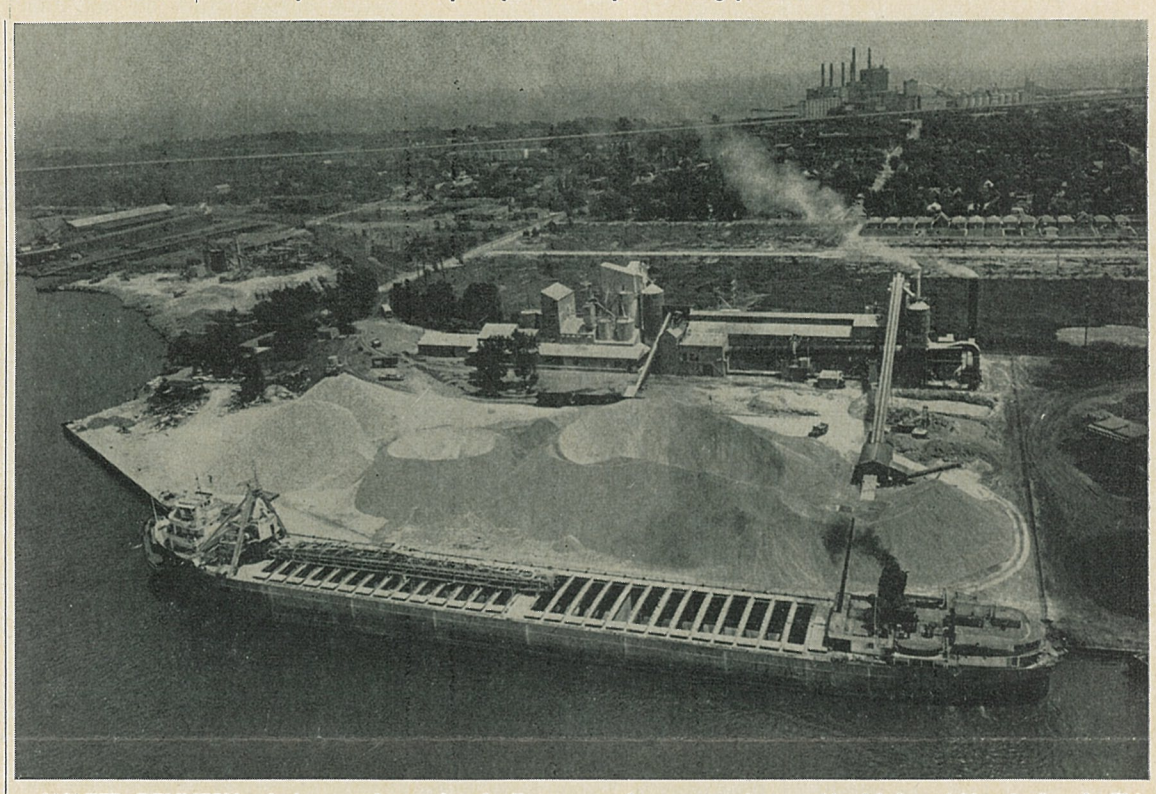
Material Service operates its own marine department and has five riverboats that push barges up and down Illinois waterways. The marine department, located at Lockport, Ill., has its own shipyard, which does naval design, construction, repair and maintenance for the Coast Guard as well as for Material Service and other firms. In 1968 the department's barge line operations logged 228 million ton miles, including hauling done for other firms. A Material Service plant that produces various sizes and types of concrete pipe is also located at Lockport.

Even though the Resources Group companies operate separately, they work together in many instances. Many Material Service staff members perform services for the other Resources Group companies.

Recent repairs made on United Electric's stripping level at Cuba Mine are an example of the way the different companies cooperate and work together. A new 32-ton boom section for the stripping shovel was built at Material Service's maintenance shop in Lockport from designs drawn by United Electric's engineering department.



REDI-MIX—Common sight are "checkerboard" trucks dispensing redi-mix concrete.



WATER DELIVERY—Lake carrier unloads limestone for processing at Marblehead Lime's South Chicago plant. Lime has variety of applications ranging from steel production to water purification.

Marblehead Operates 11 Plants; Leads U. S. in Lime Production

Marblehead Lime Co., which will be 100 years old in 1973, is the country's largest producer of lime.

In the past eight years, Marblehead has tripled its lime sales and quadrupled its total sales. The firm operates 11 plants in seven states, stretching from New York to Utah.

These include a lightweight aggregate operation in Ottawa, Ill., and the facilities of its subsidiaries, Darlington Brick and Clay Products Co., of Pittsburgh and Powell & Minnock Brick Works, Inc., a newly acquired brick firm in Coeymans, N. Y. (near Albany).

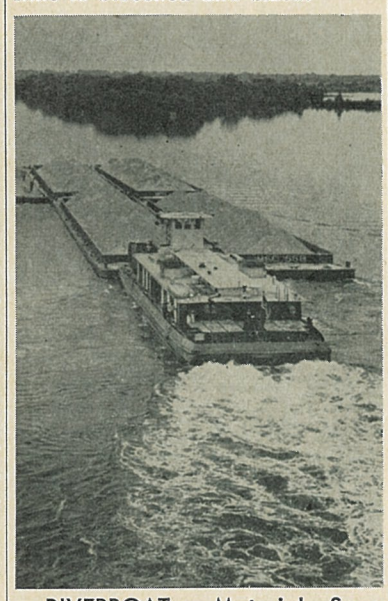
Most of the lime Marblehead digs from the ground and processes (by crushing and burning) is sold to steel mills for use in steel-making furnaces. Lime also is used in water purification, in masonry high-rise construction, in constructing and stabilizing roads, and in drying up construction areas. In 24 hours, lime can make muddy ground dry and hard.

There are two basic types of limestone—high calcium and high magnesium or "dolomitic." Both types are used by metallurgical and chemical process industries. Steel mills use it as a flux to remove impurities in the process of making steel. High magnesium or "dolomitic" lime is used for building and metallurgical purposes.

Another basic product made from dolomitic limestone is refractory (or "dead-burned") dolomite, a product essential to the steel industry. Dolomite is combined with iron, dead-burned in high-temperature kilns, and used to line the steel mill furnaces to protect fire brick linings.

Marblehead's high calcium lime plants are located in Hannibal, Mo.; Quincy, Ill.; South Chicago; Buffington, Ind. (near Gary); and River Rouge, Mich. Dolomite operations are at Thornton, Ill., and in Tooele County, Utah, 75 miles west of Salt Lake City.

When limestone is processed, graded and sized, stone of proper chemical quality is fed into giant kilns for a burning process that releases carbon dioxide gas and changes the stone from a carbonate to an oxide. The temperatures attained in these kilns range from 2,500 to 3,100 degrees Fahrenheit. After being burned, the lime is screened and sized.



RIVERBOAT — Material Service's marine department operates five riverboats that push barges along Illinois waterways. Shipyard maintains vessels as well as performing repair work for Coast Guard fleet.

Darlington Brick, which became part of Marblehead in 1968 and has since become an important profit center, makes red, buff and gray face brick and a line of glazed bricks, used primarily to beautify commercial and multi-family residential structures, in a variety of colors.

General Dynamics' recent acquisition of Powell & Minnock Brick Works, Inc., of Coeymans, N. Y., near Albany, will greatly enhance Marblehead's position in the rapidly growing brick market.

Powell & Minnock, which will act as a sister company to Darlington Brick, produces standard red face bricks and a line of hand-molded bricks that compliments Darlington's line and enables Marblehead to offer a wide selection of bricks for residential, commercial and industrial building.

One of Powell & Minnock's most impressive assets is its location. Situated on the Hudson River 165 miles above New York City, it has direct water access to Manhattan, the largest brick market in the world. When Powell & Minnock, which is already the leading supplier of brick to New York, combines its sales with Darlington, the two firms will do twice the business of the nearest competitor in this key market. Since 1968, use of brick in the U. S. has increased 7½ per cent a year.

Marblehead's facility in Ottawa, Ill., produces Materialite, a lightweight expanded shale aggregate used in producing block and structural concrete. This lightweight concrete can be molded into a vast array of beautiful, curving shapes and can span spectacular distances.



MAXIMUM MONEY—E. V. Mansfield of Convair's Dept. 565-1, center, receives maximum-allowable $5,000 Employe Suggestion award check and commendation certificate from E. R. Peterson, vice president-research and engineering. At left is F. D. Applegate, director of product design.

Paperwork Consolidation Idea Brings $5,000 Suggestion Award

A time-saving idea and 15 minutes to put it on paper has paid off in a maximum-allowable $5,000 Employe Suggestion award check for Ed Mansfield, an engineering drawing checker in Convair's Dept. 565-1 at Lindbergh Field.

Mansfield's suggestion resulted in division procedures being revised to permit making both Class 1 and Class 2 engineering drawing changes on the same engineering order (EO) forms in the DC-10 program.

The proposal was approved by Convair and McDonnell Douglas and is expected to save $100,000 during its first year of implementation. Class 1 engineering changes require McDonnell Douglas approval but Class 2 changes do not.

Combining two or more changes on one form will save time in each department involved in processing changes for the DC-10 program.

Mansfield's check and an accompanying commendation certificate were presented Aug. 25 by E. R. Peterson, vice president-research and engineering, and F. D. Applegate, director of product design.

It was the second ES award for Mansfield, who has been with Convair as a designer and engineer drawing checker since 1954. The first, a month earlier, was a $25 award for suggesting task status report changes.

Mansfield, a graduate of the University of Minnesota with a bachelor's degree in aeronautical engineering, said he will use most of the $5,000 award toward construction of an addition to his home.

Computer Apt Pupil; Learns How to 'Read'

A computer has been taught to read.



Roger Benson

Roger A. Benson, Convair Dept. 591-0, has developed a technique whereby a computer examines a list of words and determines which can be combined into meaningful phrases or subject headings to describe a document being put in a computerized information retrieval system.

Benson calls the technique NEXUS (meaning connection, tie, or link) because NEXUS instructs the computer how to connect words. The technique uses the rules of language in a way similiar to humans.

NEXUS operates on titles and abstracts that have been subjected to a term selecting process or automatic indexer. In this process, the content words of a title are separated from the function words and fed into a computer.

NEXUS acts on these content words by examining them for linguistic clues and makes coordinating decisions based on the linguistic evidence it finds.

For example, in the title "Geodetic Junction of France and North Africa by Synchronized Photographs Taken from Echo I Satellite," the automatic indexed content words are "Geodetic," "Junction," "France," "North," "Africa," "Synchronized," "Photographs," "Echo," and "Satellite."

Using NEXUS, the words are automatically coordinated into "Geodetic junction," "France," "North Africa," "Synchronized photographs," and "Echo satellite."

Computer-stored terms created in this way provide access to documents stored for information retrieval in a way that still retains the specific terminology of the technical expert yet combines the terms in a more general way for the knowledgeable non-specialist.

Advances in automatic indexing helped pave the way for new methods of text input in information systems, specifically those advances of automatic scanning and page reading devices using Optical Character Recognition (OCR) equipment. The combination of automatic indexing and optical recognition will mean significant advancement of the state of the art in information retrieval.

Convair's information storage and retrieval (IS&R) activities have long been recognized as being in the forefront of information science in the technological community.

Information systems innovated by this effort have had a Corporate-wide impact by supporting other divisions of General Dynamics in helping to solve the complex problems connected with handling technical information and scientific data.

Some of the projects supported by IS&R have been the artificial heart feasibility study, the aeromedical evacuation system and study, and the NASA tape conversion project.

Benson is now in Stockholm, Sweden, where he will present a paper on NEXUS at the 1969 International Conference on Computational Linguistics.

DC-10 Mfg. Requires Wide Tooling Range

Convair tool manufacturing departments have gone from macro to micro part fabrication while fulfilling production requirements for the DC-10 fuselage program.

One part, a clip in the nose gear door assembly, weighs only ounces—while one barrel assembly fixture tips the scales at more than 25 tons and is 55 feet long, 17 feet wide, and 12 feet high.

Degler Assists With 'Crusade'

Al Degler, chief plant engineer for Electronics-SD, next week will begin a special nine-week assignment as a "loan executive" with United Community Services of San Diego County to assist with the 1969 United Crusade.



A. E. Degler

He will be assigned to the "industrial, commercial, and services" division and will work with large firms in the San Diego area in fund raising for support of more than 75 area health, youth, and community service organizations.

Degler's UCS assignment will begin next Wednesday, Sept. 10, with a three-day orientation program during which he and other "loan executives" from business and industrial firms will be briefed on Crusade plans and will visit selected UCS-assisted agencies.

Goal for the 1960 county-wide campaign is $5,500,000.

Degler joined Stromberg-Carlson in Rochester in 1954 and has been with General Dynamics organizations in San Diego since 1956.

Depts. Achieve Banner Awards

Second quarter Convair Craftsmanship Banner Awards were presented recently to departments which division staff members considered to have established the most meaningful number of craftsmanship goals in support of division objectives, and which have performed in the most creditable manner toward those goals.

The departments were:

Under Kearny Mesa Operations, the KM factory departments under R. A. Clark and under Lindbergh Field Operations, the LF Factory departments under Frank Blair; under finance, Dept. 191, general accounting; material, Dept. 860, financial and program control; engineering, Dept. 506-5, ocean data systems; reliability control, Dept. 141, process control and quality engineering; launch vehicle programs, Dept. 962-2, engineering systems; ETR, Dept. 979-3, support operations and Dept. 979-6, accounting; VAFB, Dept. 985-3, support services.



NUMBER ONE — Mrs. I. M. (Sunny) Klein, DCASPRO management technician at Convair, has been named "Woman of the Year" by the San Diego chapter of the American Business Women's Association.

Five Years of Study Pays Off As Morris Becomes Journeyman

James Morris of Convair's Dept. 401-1 received his journeyman's certificate as a plaster pattern maker recently after completing a five-year apprenticeship in which he worked in several factory departments and earned an Associate in Science degree from San Diego Evening College.

Morris, 25, joined Convair in 1964 as a molded plastic tool builder apprentice but later changed to a plaster pattern apprentice, extending his apprenticeship period an extra year.

In addition to knowledge gained in the molded plastic and plaster pattern areas during the apprenticeship, he worked a few months each in jigs and fixtures, tool and die, form block, planning, inspection, template, wood mockup, foundry, and tool design departments.

Morris was in school five nights a week during his first two years as an apprentice — attending both Evening College courses for the apprenticeship and Automation Institute courses in computer programming and data processing.

He earned his degree in June after five years evening study.

Morris, married and with three children, called the Convair apprenticeship program "the greatest thing of which any young person who meets the standards can take advantage."

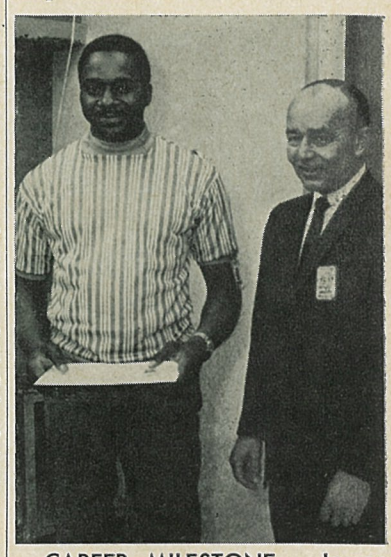
He said his rotating assignments have given him a good working knowledge of tooling processes and functions and understanding of how the different departments "tie in" with one another.

Morris was one of eight chosen from 60 applicants when he entered the apprenticeship program.

The general foreman for whom he now works, Fred Shepard, completed a tool and die apprenticeship with the division in 1949.

Wayne Turner, educational services Dept. 130-3, apprenticeship coordinator, said the division now has 33 employes in apprenticeships. Included are tool and die, jigs and fixtures, electronics, plaster pattern, machinist, mechanical inspection, electrical inspection, and calibration technician apprentices.

The apprenticeship program is sponsored jointly by Convair and the International Association of Machinists and is administered by an eight-man Joint Apprenticeship Committee.



CAREER MILESTONE — James Morris of Convair's Dept. 401-0, left, recently received journeyman's certificate from W. L. Van Horn, director of operations, on completion of five-year apprenticeship. Morris also earned Evening College degree as part of program.

Agreements Reached With Seven Unions

Labor agreements with seven unions representing Convair hourly employes have been completed with the signing last month of an agreement with the United Association of Plumbers and Pipefitters (UAPP).

The unions and the effective dates of contracts are: International Association of Machinists (IAM), March 31; The International Brotherhood of Electrical Workers (IBEW), and the International Alliance of Theatrical and Stage Employes (IATSE), April 28; The United Plant Guard Workers of America (UPGWA) and the International Union of Operating Engineers (IUOE), May 5; The Engineers and Architects Association, (EAA), July 21 and the UAPP, Aug. 4.

The contracts expire in the late 1972-early 1973 time period.

Lewis Cites Convair For Bonds Record

Convair General Manager Jack L. Bowers has received a letter from General Dynamics President Roger Lewis expressing "appreciation to all your employes for their support" of the 1969 U.S. Savings Bonds campaign.

Lewis said he "appreciated the fine campaign conducted by Convair which resulted in 91 per cent participation," and which helped the Corporation achieve an overall 79 per cent. (Corporate story on page 6.)

Lee and David Pass ASQC Test

Two Convair men have passed the written examination and received Quality Engineer certificates from the American Society for Quality Control.

They are Fred R. Lee, Jr., Dept. 143-0, and Vernon H. David, Dept. 141-2.

Certification is a recent program of the society and only three examinations have been given. Out of approximately 22,000 ASQC members, less than 400 hold the certificate.

Other Convair employes holding certificates are W. T. Hollar, Dept. 141-0, L. A. Milton, Dept. 141-4, and R. W. Becker, Dept. 141-4.

Another examination for the certificate will be given in November. A refresher course for those interested in taking the exam will be conducted by the San Diego chapter of ASQC from 6:30-9:30 p.m. Thursdays, Sept. 11 through Oct. 30, Mesa College, Room H-305. For information call Hollar, ext. 1923 KM.



FOR COURAGE — Charles J. Beverlin, left, Convair launch mechanic at Eastern Test Range, receives $1,000 Savings Bond and letter of commendation from Orion Reed, Convair ETR operations manager, for quick action when malfunction caused Atlas-Centaur 19 to begin losing pressure in February. Billy B. McClure previously received similar award (GD/NEWS, Aug. 6, 1969).



ELECTRONIC CRANE—Tracy Doucette Jr., Convair crane operator, tests remote control five-ton crane at Lindbergh Field plant. Four remote control cranes are being installed for heavy DC-10 fuselage lifts. Multiple cranes and remote control system will provide exacting lift coordination and 20-ton capacity.

Cranes Radio Controlled For Giant DC-10 Lifts

Convair-built DC-10 fuselages will be getting a "big lift" during final assembly from four remote-control cranes being installed in Bldg. 3. at the Lindbergh field plant.

The overhead cranes, each with a five-ton capacity, will provide the lift for both two-thirds and full barrel fuselage sections, operating simultaneously in tandem, as required.

When in its assembly fixture, the two-thirds barrel of fuselage sections C and D weigh in at nearly 30,000 lbs. This massive assembly must be moved into a "turnover" fixture for final assembly.

Although the four cranes were strong enough for the load, it would be nearly imposible, using four men and manual operation, to achieve the perfect coordination necessary on a tandem lift. Remote-control provided a solution.

Radio control lift potential was provided by refurbishing two existing cranes and purchasing a pair with the remote units included. Two "bridges" — rails on which the cranes move — were also obtained and installed.

A master control unit will operate the four cranes for the tandem lift — the unit also controls two and three crane lifts. Additionally, each crane has its own remote control unit operated on ground level. Manual operation is still possible through modified hand controls installed in the crane's cab.

The cranes will perform several lifting operations throughout the DC-10 program and will be available for other lifting operations.

Astronauts Slated To Visit Surveyor

Apollo 12 astronauts during their visit to the moon in November may inspect a Surveyor spacecraft launched in 1967 by Convair's Atlas-Centaur 12.

Plans have been made for Apollo 12 to land near Surveyor 3, which has been on the moon's Ocean of Storms since April 20, 1967.

Convair's AC-12, which started Surveyor 3 on its 65-hour transit to the moon in April, was Centaur's first two-burn operational mission and brought numerous commendations to Convair for its accuracy.

Injury Prevented By Safety Goggles

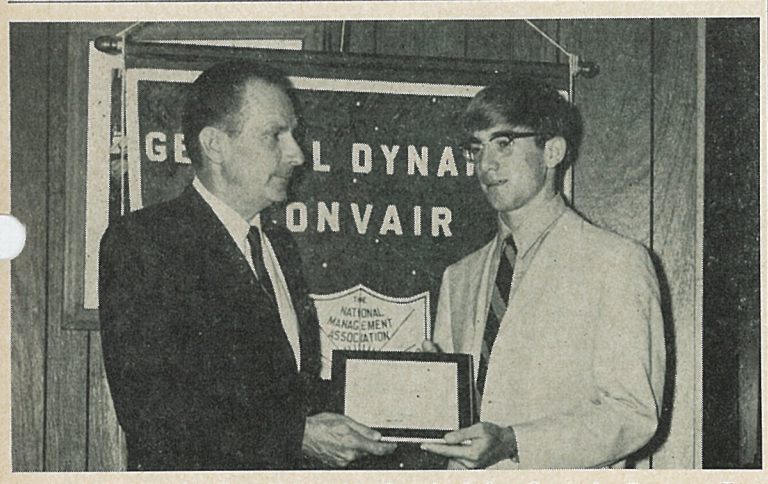
Convair division's Charles R. Terry, Dept. 027, was welcomed to membership in the Wise Owl Club recently. Membership is reserved for those who have escaped serious injury thanks to wearing safety glasses.

Terry, a router operator, was struck by a flying piece of metal when a cutter fragmented. A lens of his safety goggles was shattered, but he was unhurt.

Pt. Loma Test Site Being Dismantled

Convair plant engineering and material disposal departments recently began dismantling facilities of the division's Point Loma Test Site.

Constructed in 1954, the site provided test facilities for Atlas and Centaur during Convair production. The ten towers and blockhouses on the site were used chiefly for fueling/defueling tests.



MERIT SCHOLAR—Orion H. Reed, left, Convair Eastern Test Range operations manager, presents General Dynamics Merit Scholarship award to James H. Sylvester, son of J. H. Sylvester, Dept. 979-1. Young Sylvester will enter Georgia Institute of Technology this fall. His father is an engineering supervisor with Centaur program.

Entries Due For Art Show

Entries for the Convair Employes' Art Show must be delivered to the CRA Clubhouse between 9 a.m. and 1 p.m. Friday, Sept. 6.

Categories include oil painting, water colors, pastel painting (oil or chalk), drawing (pencil, pen, charcoal), clay sculpture, wood sculpture, metal sculpture, and miscellaneous wall hanging (collage, stichery, etc.).

The show is scheduled 7 to 10 p.m. Friday, Sept. 12, and 9 a.m. to 3 p.m. Saturday, Sept. 13.

Rules may be obtained from employe benefits outlets. For information, call ext. 1111 KM.

Reliability Courses Scheduled at Mesa

San Diego Evening College will offer 12 quality control and reliability courses this fall at the Mesa College campus.

The courses, from 6:30 to 9:30 p.m. on various days, include Quality Control Concepts and Techniques; Procurement Quality Control; Quality Control Engineering, Principles and Techniques; Reliability Objectives; Introduction to Non-destructive Tests; Processing Quality Control Data; Radiographic Safety; Electronic Quality Control; Mechanical Metrology; Configuration Management; Ultrasonic Testing; Introduction to Statistical Quality Control.

The courses are applicable to either an Associate in Science degree or a Certificate of Proficiency in Quality Control and Reliability.

Among instructors for the courses are P. E. Gelles, Dept. 144-2; S. W. Gill, Dept. 142-1; W. T. Hollar, Dept. 141-0; R. J. Hendrickson, Dept. 144-1. For information call Hollar, ext. 1923 KM.

Robinson Captures Honors in Shooting

Bud Robinson won sharpshooter honors with a score of 260-2x during CRA Pistol Club matches Aug. 24 at police range.

Second place honors went to Susie McKee, shooting in her first match.

Other results:

Center Fire — (also qualifying trials for club team) Don O'Brien, 277-2x; Charles Kropp, 246-1x; Bill Dittman, 231-1x; Ernie Kampmann, 223. Expert—Kropp, 277-5x; Leon Thomas, 271-5x; Masters — O'Brien, 287-7x.

Next match and training class Sept. 14 at 9:15 and 10:30 a.m. at police range.

Club for Disabled Honors Convair Man

Karl Macy, Convair Dept. 780-1 electronics circuit board fabricator, has received a pin for his services as International Indoor Sports Club president the last two years.

The pin was presented at the organization's recent convention in Minneapolis, Minn. The club provides entertainment and social activities for the physically handicapped.

Big Crowd Attends Electronics Picnic

More than 550 attended the Electronics-SD Management Club and Recreation Association picnic at CRA Missile Park Aug. 16.

Special events consisted of sack races, horseshoes, water balloon contest and table tennis.

Bargain Tickets

The following discount tickets are available at employe benefits:

Sea World tickets good for a 50-cent reduction on adult admission.

Discount tickets good for $1 reduction on any regular half-day fishing trip at Seaforth Sportfishing, 1717 Quivira Road or at Islandia Sportfishing, 1551 West Mission Bay Drive.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Sept. 9. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS — Meeting Sept. 17, 7:30 p.m.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — "Get acquainted" 12½-mile ride, Sept. 7, 2 p.m., from Islandia Hotel to Star of India. El Monte Park, 25-mile ride, Sept. 13, 9 a.m.

BONAIR FLYERS — Meeting Sept. 4, 7:30 p.m.

BOWLING—Winter leagues now forming.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m. and 9 a.m. to noon.

CHORUS — Rehearsals Wednesdays, 7:30 p.m.

COINEERS — Meeting Sept. 8, 7:30 p.m. with "swap session."

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS — Meeting Sept. 10, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Sept. 16, potluck, 6:30 p.m.; meeting, 7:30 p.m., Gillespie Field Clubhouse.

GARDEN CLUB — Meeting tonight (Sept. 3), 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Whispering Palms tournament, Sept. 27-28.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 10 p.m. Saturday; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting Sept. 9, 7:30 p.m.

ICE SKATING — Big Bear weekend, Sept. 12-14. GD family skate night each Thursday, 6:15-7:15 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB — Shoot, 9:15 a.m., training class 10:30 a.m., Sept. 14, San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Sept. 4, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting Sept. 10, 7:30 p.m.

RIFLE CLUB—Senior shoot, Sept. 10, 7 p.m.; Junior shoot, Sept. 6, 9 a.m., Gillespie Field Range.

ROCKHOUNDS — Meeting Sept. 10, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SPECIAL EVENTS—Small boat piloting and seamanship class starts Sept. 25, 6:30-9:30 p.m. CRA art show Sept. 12-13, entries now being accepted.

SPORTS CAR CLUB—Meeting Sept. 10, 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE—Dance classes start Oct. 7, 8-10 p.m. Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting Sept. 11, 7 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 7:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOASTMISTRESS—Meeting Sept. 16, 7 p.m.

TROPICAL FISH—Meeting and workshop Sept. 15, 7:30 p.m.

WOMEN'S GOLF—Torrey Pines tournament, Sept. 13.

Adventurers to Show Artifacts, Photos

Photographic slides and prints, natural finds, and special displays will be exhibited by CRA Adventurers at a meeting at 7:30 p.m. Sept. 17 in the CRA Clubhouse.

Entries will be judged by members and prizes will be awarded. Slides will be judged in two categories—general (scenic) and human interest. Natural finds entered, such as rocks or Indian artifacts, must have been obtained on club-sponsored trips.

Each member of the club also is invited to bring 10 favorite slides to be shown and described at the meeting. Plans for a Sept. 27-28 Mt. Whitney trip will be discussed.

Reservations Close For Big Bear Trip

Space is still available for CRA Ice Skating Club's weekend trip to Big Bear, Sept. 12-14, according to Bud Davies, club commissioner.

Davies said cost of the weekend, including two nights lodging and meals, is $15 per person. Children under eight go for half price. Deadline for reservations is Friday, Sept. 5.

Call Davies, ext. 3012 KM, for information.

Daughter Competes In National Tennis

Vickie Jensen, 13, daughter of Henry Jensen of Convair Dept. 401-1, reached the quarter finals of the national girls tennis championships at Lake Bluff, Ill., recently, as well as the national 14-and-under championships at Little Rock, Ark.

Ranked fourth among 14-and-unders in Southern California, Vickie was competing against the best players in the U. S. in both age groups.

'Swap Session' Set By Coin Collectors

CRA Coineers will feature a "swap session" at the 7:30 p.m. Sept. 8 meeting in the CRA Clubhouse.

Theme will be "your favorite choice." There will be trophy and participation ribbons for exhibits, door prizes, give-away coins, drawings, and refreshments. Junior and adult auctions will be held.

Bicycle Club Plans 'Get Acquainted' Ride

CRA Bicycle Club plans a 12½-mile "get acquainted" ride for 2 p.m. Sunday, Sept. 7, starting at the Islandia Hotel and going to the Star of India. Ride leader is Dave Lukens, 277-7350 or 2881 KM.

At 9 a.m. Saturday, Sept. 13, there will be a 25-mile ride from the home of John Fassel, 11010 Oak Creek Dr., Lakeside, to El Monte Park, Ride leader will be Dick Gilbert, 223-8848 or 1267 LF.

After the ride, members and guests have been invited for a swim at the Fassel residence. Those attending may bring a picnic lunch.

Desta Blevins Wins Novice Net Title

Final rounds of the CRA summer tennis tournament were played at Mesa College in novice women's and mixed doubles classes.

Desta Blevins took the novice women's title, 6-1 and 6-0, from Connie Bates. In the consolation round Kathy Mostowy defeated Dorothy Clayton, 3-6, 6-4, and 6-1.

In mixed doubles, Dianna and Mike Griggs took the title with 24 out of 32 points in round robin play. Mary Cormier and Ed Marikle were runners-up.

New Dance Series Starts This Month

CRA Dynamic Eights square dancing club will hold registration Sept. 16, 23 and 30 for a new series of dance classes slated to kick off Oct. 7. Registration is from 8-10 p.m. in CRA Clubhouse and is open to all employes, families and friends ages 16 and up for a fee of 50 cents.

Instructor and caller for the classes will be Clark Elliot.

For further information call R. J. Collette, ext. 1050 LF or CRA Clubhouse, ext. 1111 KM.

El Cajon Courses Begin This Month

Classes in mechanical and architectural drawing (Sept. 15) slide rule, (Sept. 16) and blue print reading, (Sept. 17) will be conducted between 7 and 9:30 p.m. at the El Cajon Adult School, 1035 Madison Ave.

There are no prerequisites and registration will be accomplished at the first class. Certificates will be provided upon class completion. The courses are applicable to the G. I. Bill program.

WINNERS ANNOUNCED IN CAMERA CONTEST

Winners in CRA Camera Club's Third Quarter Contest are:

Black and White (class A advanced) — Bill Pain, Clark Winsor, Bob Pettyjohn; Color (class A advanced) — Jim Mildice, two slides; Pettyjohn, one slide; Ken Rinker, two slides; Sharon Williams, one slide; Color (class B beginners) — Bill Pain.



SMOOTH SAILING—The oiler-supply ship USS Milwaukee moves swiftly out to sea on her maiden trip in which she registered successful operation of her major systems and other equipment.

General Dynamics Bond Buyers By Deduction Now at 79 Pct.

General Dynamics has achieved a new high of 79 per cent participation in U. S. Savings Bonds purchases through payroll deduction — a 16 per cent increase since 1966.

Roger Lewis, General Dynamics president, reported recent bonds campaigns by divisions/subsidiaries resulted in 15,143 new participants, bringing the total number of bonds buyers to 71,885.

In addition, 3,339 employes increased the amount of purchases and 2,858 signed for purchase of Freedom Shares in combination with Series E Bonds.

Stromberg-Carlson's Ardmore facility led all General Dynamics plants with 100 per cent participation. Corporate Headquarters reported 97 per cent.

In a letter to Sal DiPaola, New York area Savings Bonds manager, Lewis called attention to General Dynamics' steady rise in bond buying by deduction, moving from 63 per cent in 1966 to 68 per cent in 1967 and 76 per cent in 1968.

United Coal Companies during the current year broke the 50 per cent "barrier" for the first time, thereby qualifying for a Minute Man flag award.

Health Control Center Established To Attack Problems of Pollution

General Dynamics is stepping up its war on air and water pollution.

A new Bio-environmental Health Control Center has been established at Fort Worth division to seek ways to reduce or eliminate the burgeoning pollution problem.

Frank Paschal, Fort Worth division health physics administrator, will head the Center, which will provide service for all divisions and subsidiaries in the Corporation.

"Our purpose is to study the effect man is having on his environment," Paschal said, "and at the same time the effect artificially induced environments are having on man.

"Our divisions are constantly introducing new manufacturing processes, chemical and physical devices which can affect our employes or neighboring community populations. Thus it is imperative that we stay ahead of the associated problem these things can cause."

The Center is now establishing a library of information and literature on health legislation and standards.

In addition, literature will be available on: air and water pollution; air and water sampling, testing and monitoring equipment; waste treatment and disposal; environmental controls such as filters, scrubbers and collectors; sanitation; relative toxicities of chemicals; health aspects of new processes; and noise, lasers and microwaves.

A roster of Corporate personnel with technical capabilities and a list of outside consulting services will also be available.

"We will keep a list of Corporate instrumentation used to detect and monitor pollutants, such as noise, excessive heat and lighting," Paschal said. "We also hope to get additional instrumentation needed to carry out plant surveys and stack sampling."

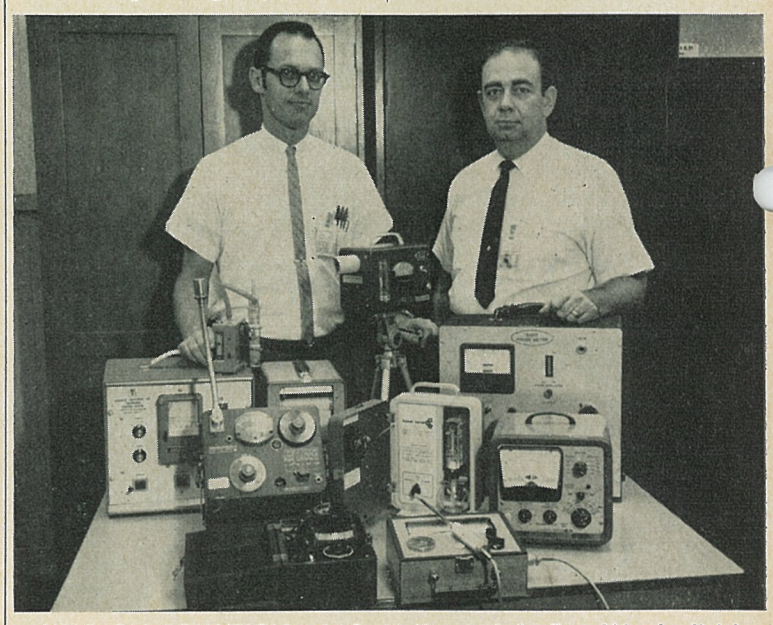
Projects planned for the future include manuals, handbooks and other operating standards and training aids.

Specific personnel also will be recommended to serve on federal, state, city, regional and industrial agencies concerned with pollution and its control.

The literature and reports section of the new control center is headed by J. S. McKarns, industrial hygienist.

J. D. Eastes, senior health physicist, heads the sampling and instrumentation and surveys section.

In-plant consultants at Fort Worth include M. G. Crum, applied research laboratory; Dr. R. E. Fields, nuclear staff scientist; Dr. N. H. Godbold, space/nuclear safety; Dr. H. G. Hedrick, applied research laboratory; Dr. J. L. Judson, flight surgeon; Dr. J. K. Leverett, chief physician; F. R. Temple, chief safety engineer; C. B. Miller, chemistry laboratory; J. H. Morris, chemist; and M. J. Puma, chief chemist.



WAR ON POLLUTION—J. S. McKarns, left, Fort Worth division industrial hygienist, and J. D. Eastes, senior health physicist, display some of the air-sampling equipment which will be used in new Bio-environmental Health Control Center. Services will be available to all Corporate members.

Employe Suggestions Chalk $6 Million Saved

Employe Suggestion programs saved $6 million for General Dynamics divisions and subsidiaries during the first six months of this year.

Algie A. Hendrix, Corporate vice president, said this represented 56.2 per cent of the collective Employe Suggestion program savings goal for the year.

Exceeding 50 per cent of annual goals at the end of June were Pomona (90 per cent); Canadair (79.6); Stromberg-Carlson (73.9); Electric Boat (62.2); Convair (60.4); Fort Worth (59.7).

Fort Worth division recorded the highest total dollar savings through ESs in the second quarter, followed by Electric Boat.

Convair retained its lead in the "best performance" standings with 99 of a possible 100 performance credits during the second quarter — based on number of suggesters, number of suggestions, and suggestions adopted per 100 employes.

Pomona was second with 79 performance credits for the second quarter and Quincy was third with 76.

Quincy continued first in the "most improvement" competition with a 32.9 per cent gain over first-quarter standings and 121.4 per cent improvement over its 1968 performance.

Stromberg-Carlson was second improving 26.9 per cent in the second quarter and 92.3 per cent over the previous year.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

EDWARD L. BALL JR., formerly General Dynamics director-engineering and administration, appointed assistant director, Department of Defense, Research and Engineering, responsible for engineering management. **SAMUEL O. PERRY** assumes Ball's duties, becoming director of program analysis and administration.

GORDON C. MORISON (1956) from Stromberg-Carlson to Corporate Headquarters; **GARY V. HAYES** (1961) from Stromberg-Carlson to Corporate Headquarters; **WILLIAM L. CHITTICK** (1959) from Convair division to Canadair, Ltd.; **LUIS LUCERO** (1960) from Electric Boat to senior weights engineer, Convair; **ROGER C. McKEE** (1960) from Convair to process administration and control supervisor, Stromberg DatagraphiX; **DAVID L. PALMER** (1966) from Pomona to Corporate Headquarters; **FRANCIS TAMARO** (1958) from Electric Boat to Quincy as senior staff assistant; **JAMES B. PUGSLEY** (1955) from Stromberg-Carlson to DatagraphiX as senior quality control engineer; **WALLACE B. CALLAWAY** from Electric Boat to electrical engineer, DatagraphiX; **JOHN D. CASE JR.** from Corporate Headquarters to Convair as interviewer; **DONALD S. LYON** (1956) from Electronics, Rochester to Quincy; **MAURICE RIGGS** (1968) from Electronics, Rochester to senior engineer, Stromberg-Carlson; **THOMAS M. SULLIVAN** from Canadair, Ltd. to Convair as manager, military V/STOL aircraft requirements; **JAMES T. CARROLL JR.** (1948) from Convair to Fort Worth; **NICHOLAS G. COLOVUS** (1968) from Convair to Corporate Headquarters; **G. E. HUDSON** (1956) from Pomona to contract administrator, Fort Worth; **CHARLES T. KRUSE** (1953) from Pomona to Electric Boat as manager of cost accounting; **HARRY B. ROGERS** (1953) from Convair to Corporate Headquarters; **JOSEPH P. SPIEKER JR.** from Pomona to quality control engineer, Electronics, San Diego; **RICHARD WISNIEWSKI** from Convair to Electronics, San Diego as associate engineer; **JAMES H. WILLS** (1960) from Convair to director of Corporate accounting, Corporate Headquarters.

Art Savard Dies; Veteran of 39 Yrs.

Arthur J. Savard, 64, a 39-year Convair employe and coordinator for Convair 600/640 aircraft programs, died Aug. 17.

He had served as project engineer for design of the 880 and 990 liners and for other Convair aircraft including the T-29, C-131, and YC-131.

Savard joined Hall Aluminum Aircraft Co., which later merged with Consolidated Aircraft.

He had been on medical leave of absence since April 25. He is survived by a daughter, Heidi Ann, and an adopted son, Jerry.

Roy R. Brewton Retires After 28 Years Service

Roy R. Brewton, Corporate director of defense contracts settlements, retired this week after almost 28 years service with the company.



Roy Brewton

With Brewton's retirement, the office of government contract settlements has been moved from San Diego to Corporate Headquarters in New York.

John G. Lemon has been appointed director of government contract settlements. Clark E. Welsh and W. Ray Crain are Corporate staff assistants assigned to the office.

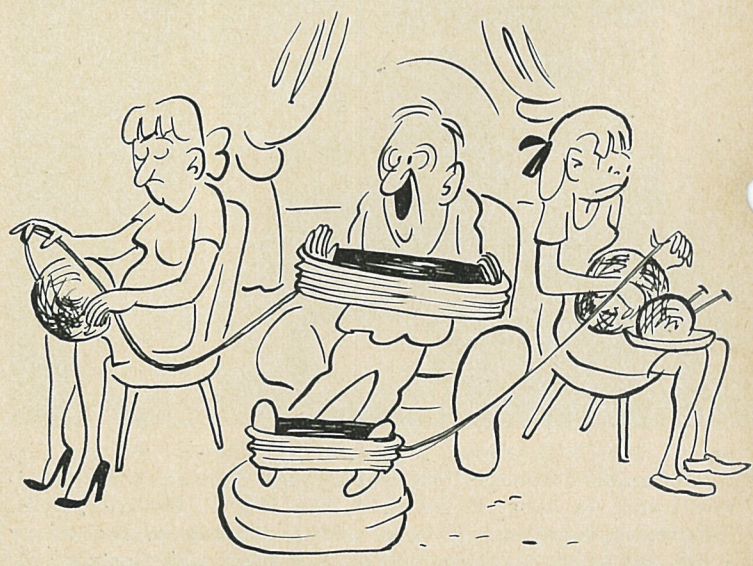
Lemon joined General Dynamics recently and has more than 18 years experience in financial management. He served most recently with Martin Marietta Corp. Aerospace headquarters, where his responsibilities included negotiation of independent research and development costs and corporate office expenses.

Prior to his appointment as Corporate director of defense contracts settlements, Brewton had served Convair since 1943 as executive accountant, director of general accounting, assistant controller, controller, and vice president-controller.

Brewton's service with the company began in November, 1941, when he became assistant treasurer in charge of taxes for Vultee Aircraft, Inc., at Downey, Calif. He was transferred to San Diego in 1943 a few months after the merger of Vultee with Consolidated Aircraft Corp.

Before joining Vultee, Brewton had been assistant treasurer in charge of taxes for International Utilities Co. and associated firms in New York and chief toll supervisor for Southwestern Bell Telephone Co. in Dallas.

He is a native of Houston County, Texas, and is a graduate of the University of Texas.

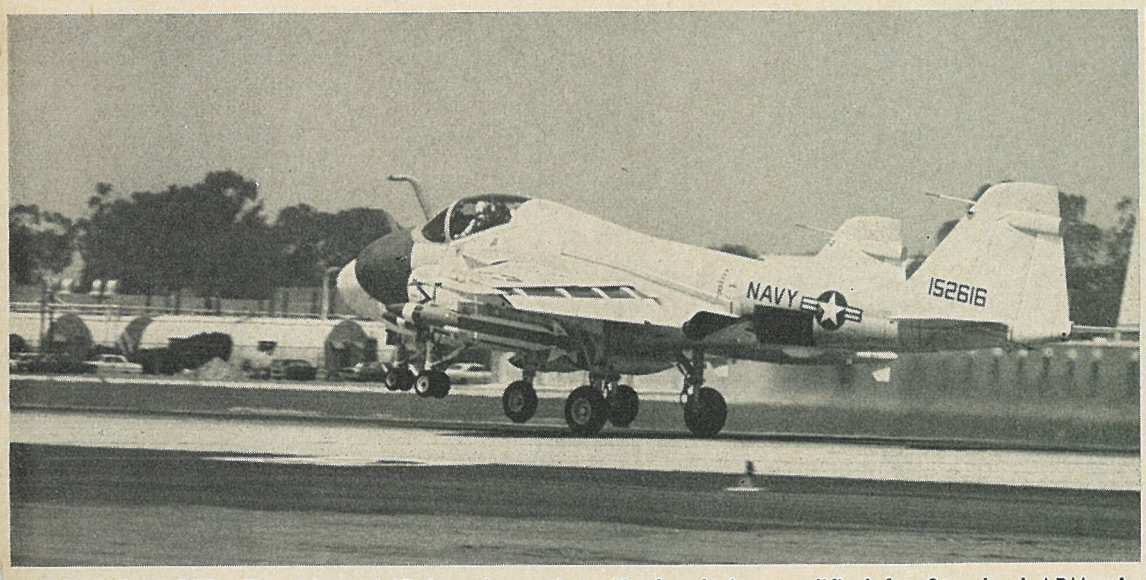


"I'd be happy to go back to a longer work week . . ."

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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TWIN TAKEOFF—Two Navy A6B Intruders take off after being modified for Standard ARM missiles in Pomona modification center at Convair's Lindbergh Field plant, San Diego. Inert Standard ARMs can be seen under wings. Modification center is staffed by personnel from Pomona, Convair, Grumman, IBM and other subcontractors.

Electronic Mail System Studied

Electronics-SD has been awarded a $147,046 contract for a 44-week study on feasibility of electronic transmission of mail for the U. S. Post Office Department's bureau of research and engineering.

Stromberg DatagraphiX, Electronics-Rochester, and Dynatronics-Orlando will assist with the wide-range study on various methods of applying electronics technology to the mails—including microwave, laser-beam, and synchronous-orbit-satellite transmission.

Postmaster General Winton M. Blount, in announcing the contract award, said it is not likely a substantial amount of mail will be diverted to electronic transmission in the forseeable future but sound planning dictates that postal engineers stay abreast of technological developments.

The four-phase study, which Electronics-SD won in a competition that involved proposals from nine companies, will involve requirements analysis, functional analysis, system evaluation, and system design recommendations.

Requirements, procedures, operational steps, and associated equipment involved in mail collection, conversion, distribution, and delivery will be delineated. Transmission systems, switching networks, command/control computers, and other technical requirements will be studied.

Both a long-term and interim design for an electronics mail handling system will be proposed in the final study phase.

Preservation of letter sanctity and security in any electronic transmission process that might be used in the future has been emphasized as a "must." (General Dynamics now manufactures digital subscriber terminal equipment for the AUTODIN communications system used by the Defense Department and other agencies in which messages are coded on transmission and decoded at their receiving points.)

The Electronics-SD mail processing systems study will include predictions on state-of-the-art of electronic communication 10 to 15 years in the future as well as analysis of possible present applications.

Delivery of "hard copy" to addresses will be considered for first electronic mail systems but an eventual alternative could be delivery on home facsimile printing devices.

In future electronic systems, automatic sorting of mail by general delivery area may be accomplished while the message is in the electronic state, prior to printout for delivery.

In the early stages of electronic mail transmission, sorted bags of mail could be produced at a few regional postal centers for reentry into normal distribution channels. In future systems where

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First DC-10 Deliveries Slated For November

Convair DC-10 manufacturing is moving into high gear this month as fuselage program departments aim at a mid-November delivery of the first joined full barrel sections (C and D) to McDonnell Douglas.

Among significant events are start of production on several first article manufacturing items and beginning of a second shift.

Included in the first articles are floor beam assemblies (manufacturing item numbers 491 and 591), nose landing gear support beams (nos. 465 and 466), nose landing gear well pressure bulkheads (nos. 461 and 463), skin panels 12, 13 and 14 for section C (nos. 473, 475, 485 and 487) and panel 14 for section D (no. 587).

Other assemblies and subassemblies continue with panels 12 and 13 in section D (nos. 573, 583, 575 and 585), door jambs (nos. 589 and 577), and other items rapidly taking shape.

A second shift was instituted Aug. 14, consisting primarily of Dept. 046 structural assemblers.

Shop orders, detail planning and assembly planning for the program are all nearing completion and detail tooling is being completed to support program requirements.

Convair subcontractors continue their contributions with Aerfer Industrie Aerospaziali Meridionali in Naples, Italy, supplying above-level skin panels. Twelve panels have been delivered to date.

Work continues in various stages on the second group of joined fuselage sections (E, F and G) for delivery in December.

Club Offering Course Series

Registration is still open for the fall management and professional development courses offered by the Convair Management Club. The courses, although primarily for club members, are open to non-members on a space available basis. Fees for the courses are nominal.

The classes are intended as a supplement to outside education and are primarily survey courses in order to give students a brief overview of the subject, to acquaint them with the latest developments and to encourage them to continue their education.

The 25 courses the club hopes to offer this fall are:

Challenges of Management; Principles of Management (Audio Visual Series); Principles of Managing (Workshop); The National Managerial Test; Effective Writing; Presentation Workshop; Speechcraft; Effective Communication; Motivation and Productivity; Functional Planning and Coordination; Managerial Leadership.

Also: Labor Management Relations; Tomorrow's Technology; Management Speaks; Law for the

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Con-Trib Drive Ends Tomorrow

Convair Employes Con-Trib-Club campaign coordinators staged a last-minute push this week as the annual membership drive neared its end.

Early results appeared gratifying. Final figures for the campaign which ends tomorrow (Sept. 18) will be available late this month.

Del Dimmitt, chief coordinator for the drive, said employes should remember that 10 per cent of whatever is pledged goes into an Emergency Aid fund for Convair employes.

"The more we give, the more there is for our fellow employes in an emergency," he pointed out.

Departmental coordinators, in addition to Dimmitt, are:

T. P. Dougherty, legal, contracts, marketing and community relations; P. F. Veal, industrial relations; L. A. Wood and J. M. Rogers, material; F. M. Wynkoop, finance; E. L. Jacobson and R. H. Gilliland, reliability; J. M. Simmons, LVP; P. D. Ferrara and T. W. Ochodnicky, engineering; G. B. Branch, R. B. Thompson, T. R. Henry and J. M. Farrar, operations; O. H. Reed and J. N. Freeman, ETR; R. C. Lynch and M. F. Tooley, Vandenberg AFB.

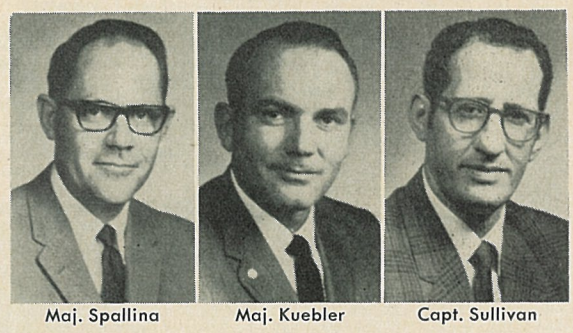
Campaign emphasis has been on giving of a "Fair Share" of wages by payroll deduction.

The Con-Trib-Club donates money through the year to support many of the service, character-building, and health activities in the community.

Air Force Officers Report For 'Education-With-Industry' Duty

Three Air Force officers have reported to Convair to begin a 10-month "Education-With-Industry" (EWI) tour of duty.

The officers are Majors Emil M. Kuebler and Marvin G. Spallina and Capt. James W. Sullivan. They reported Sept. 2 and will be with the division through June 26, 1970.

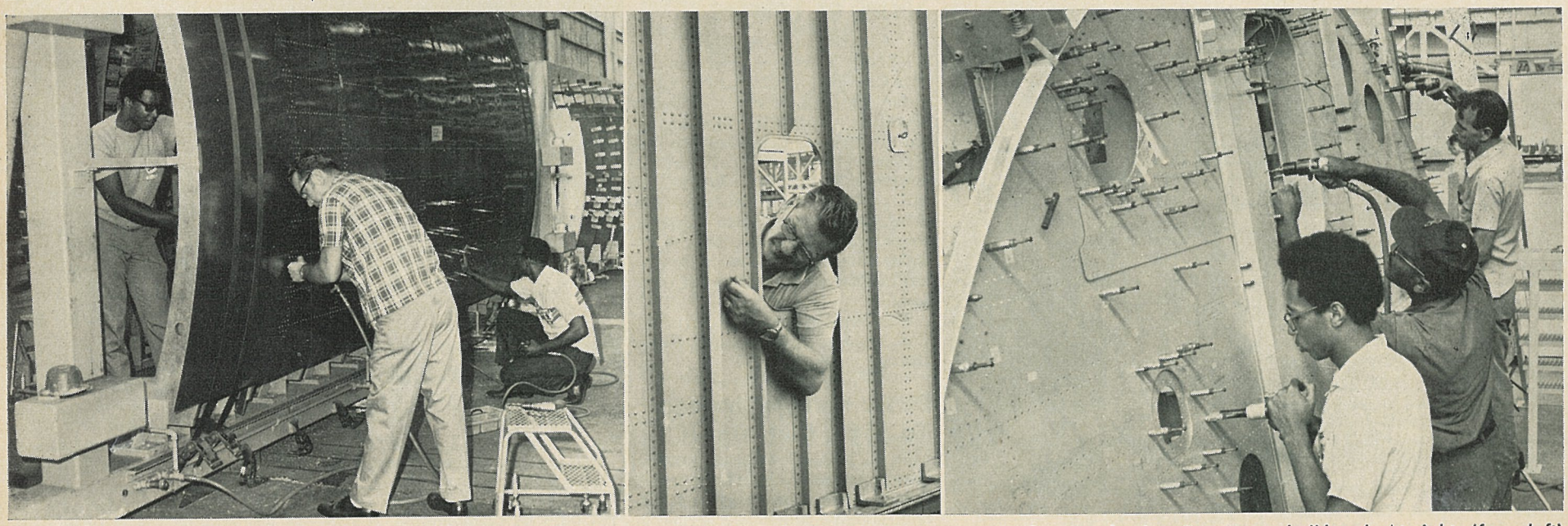


Maj. Spallina Maj. Kuebler Capt. Sullivan

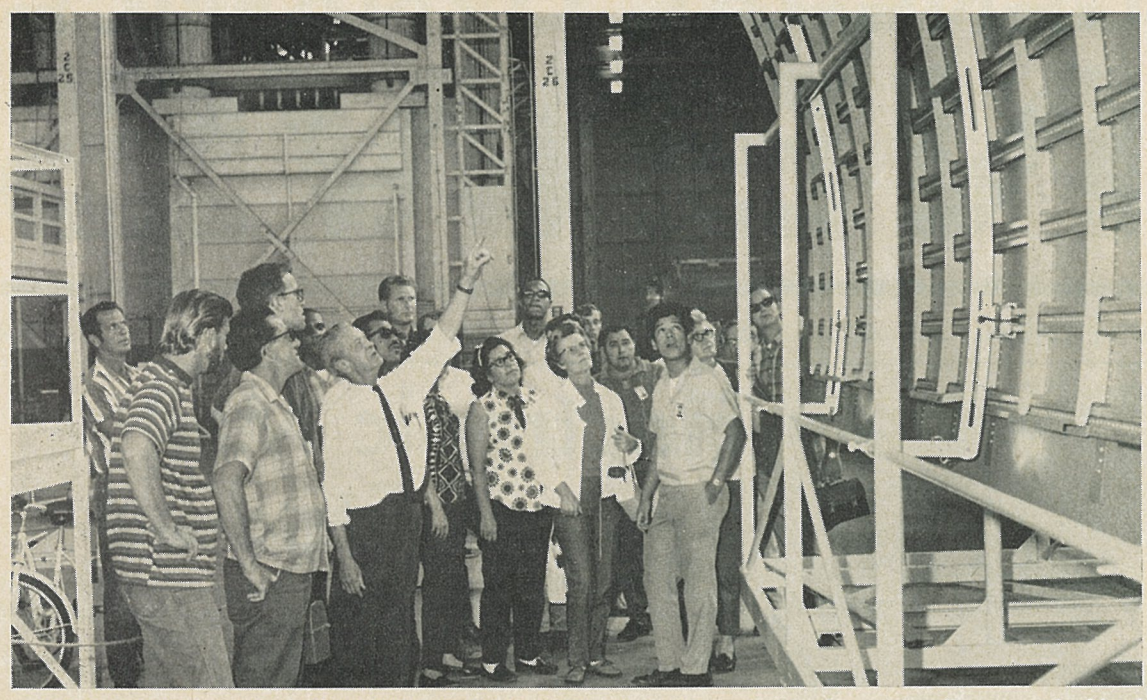
The EWI program, supported by all major aerospace companies, brings officers to industry for an industrial planning and procurement course. This is the 13th consecutive year that Convair has participated in the program.

The officers will go through a three-week general orientation covering introduction to industrial organization, Convair division management structure and pro-

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PRODUCTION EFFORT—Convair DC-10 fuselage manufacturing accelerates as Nov. 14 delivery draws near. At left is first panel assembly operations by (from left) Robert Thomas, Al Stava and W. E. Eddington. Center: E. A. Wimp checks rivet distance on part of nose wheel well pressure bulkhead. At right: (from left) Ronnie Holloman, F. C. Cheek and Derl Hale assemble another item on pressure bulkhead. All are Dept. 046 structural assemblers.



DC-10 ORIENTATION—Eddie Wallin, Dept. 046 structural assembly foreman, shows newly hired DC-10 employes various fuselage assembly operations. Hiring for program has stepped up recently as second shift operations begin.

West German Space Party Visits Convair to Discuss Proj. Helios

Three West German space officials visited Convair's Kearny Mesa plant Sept. 3 for discussion on Project Helios, a joint U.S.-German project in which Convair-built Atlas-Centaur launch vehicles will send two Helios satellites around the sun in 1974 and 1975.

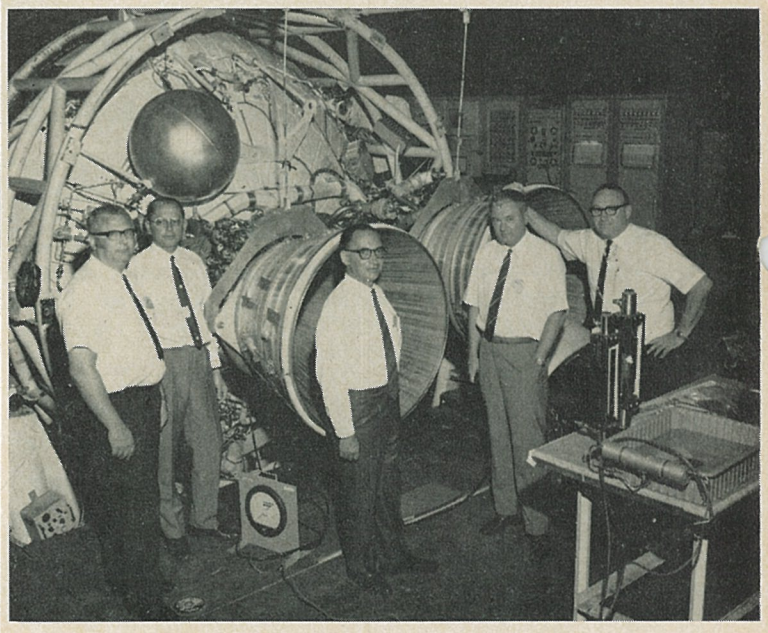
They were Walter Luksch, director of the Space Research Corp. (roughly equivalent to NASA in the U.S.); Ants Kutzer of the Federal Ministry for Scientific Research and Helios project manager; and H. Panitz, assistant Helios manager for support engineering and operations.

The visitors were accompanied by Gilbert Ousley and Charles White of NASA's Goddard Space Flight Center and were hosted by Ronald Rovenger, NASA resident manager at Kearny Mesa.

Convair personnel and the West German visitors briefed one another on plans for the Helios probes and toured Kearny Mesa factory facilities.

The visiting officials had a luncheon conference with Convair representatives including Jack L. Bowers, general manager, Ken Newton, director of launch vehicle programs, and Mel Barlow, manager of program development for launch vehicle programs.

Project Helios is expected to provide new understanding of fundamental solar processes and sun-earth relationships through information obtained on the solar wind, magnetic and electrical fields, cosmic rays, and cosmic dust.



VISITORS—Pausing briefly during inspection of Centaur launch vehicle are West German space officials and escorts during tour of Convair Kearny Mesa factory. From left: Ants Kutzer, Federal Ministry for Scientific Research, and Helios project manager; H. Panitz, assistant Helios manager for support engineering and operations; Bob Benzwi, Convair Centaur program office; Walter Luksch, director of the Space Research Corp.; Ronald Rovenger, NASA resident manager at Convair.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Sept. 15 and Sept. 30.

Thirty-year: Dept. 400, G. P. Collins; 587, R. C. Westbrook.

Twenty-five-year: Dept. 027, C. H. Schneewind; 045, A. J. Pommier; 046, A. M. Lintvedt; 250, F. Jenkins; 531, V. L. Booth.

Twenty-year: Dept. 001, R. S. Mendoza; 019, Doris T. Flack; 027, Johnnie E. Starling; 031, G. Grande, J. M. Guess; 059, Alice N. Peck; 420, R. T. Crossman; 543, J. N. Murray; 810, R. L. Kellogg.

Fifteen-year: Dept. 027, H. J. Garcia; 031, H. Anderson; 058, A. H. Bedle; 059, Phyllis P. Sawtell; 142, J. E. Vondracek; 203, J. E. Lauen; 506, B. R. Zillgitt; 507, G. W. Beeman; 508, R. M. Brindle; 516, W. K. Woods; 517, N. J. Rutherford; 526, Dorothy J. Clute; 551, H. R. Horne; 832, L. Thomas; 966, P. Genser; 986, D. R. Lukens.

Ten-year: Dept. 001, C. E. Graves; 015, G. A. Mazzoni; 059, Mary K. Hellman, Mildred A. Smith; 143, M. N. Rael, L. A. Weeks; 150, Maybelle G. Robinson; 193, K. L. Dean; 250, V. P. Arnold, E. W. Wendt; 403, A. E. Thompson; 508, J. Niemet; 515, Angela V. Alioto; 518, Henrietta G. Peltier; 524, Elizabeth Lewton; 545, M. A. Botticelli; 572, F. F. Jorrey; 587, J. K. Falstad; 756, S. A. Shepler; 780, Pauline M. Williamson; 810, Jacqueline L. Bean; 954, Geraldine M. Williams; 979, C. L. Cox, W. B. Harrison Jr., A. T. McArdle, M. R. Thomason; 985, W. H. Hilgers.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending August 29.

Dept. 143, F. A. Baugh, $21.50; 027, H. G. Baumgarten, $15; 780, T. Berge, $15; 143, G. D. Clark, $329.70; 149, R. M. Darling, C. A. McKinney, $73.05 each (joint award); 780, C. M. De La Bretonne, $54 (two awards); 588, F. L. Dohm, $15; 027, S. J. Espinoza, $15; 507, H. M. Fisher, $232.20; 250, D. S. Graves, $30; 059, L. M. Guess, $71.60; 170, C. C. Hays, $31.90; 985, R. C. Ihrig, $15; 780, C. M. Johnson, $15.30.

Dept. 031, L. E. Kopp, $574.30; 015, W. G. Lewis, $19; 027, R. E. Lopez, $15; 780, G. Marshall, $50.60; 780, T. D. Means, $38.60; 780, M. Mitts, $15; 454, C. B. Pierce, $51.90; 144, F. Piersall Jr., $98.50; 015, C. M. Renshaw, $17.90; 507, W. J. Slocomb III, $455.20 (two awards); 143, D. M. Smith, $59.20; 401, A. S. Stebbins, $148.80 (two awards) 574, E. C. Strehlau, $15; 002, V. A. Talbot, $67; 589, J. P. Walsh, $40.30; 840, E. M. Wiltgen, $24.70; 250, G. A. Young, $15.

Employe Suggestion awards approved for the week ending Sept. 5.

Dept. 045, J. J. Boyer, $15; 143, E. T. Clarkson, $15; 143, A. M. Contreras, $15; 027, J. G. DeLara Jr., $30.90; 149, M. B. Fickas, $60.70; 019, R. E. French, $27; 020, R. F. Friar, $37.30; 001, D. C. Herstedt, K. K. Jones, $7.50 each (joint award); 756, H. P. Higdon, $45 (three awards); 146, V. J. Lima, $200; 015, R. Mastny, $63.50; 059, L. A. McGraw, $128.80; 027, D. R. Noon, $41.10; 250, H. E. O'Neal, J. E. Strachan, $7.50 each (joint award); 250, J. A. Posytan, $15; 149, E. G. Smith, $15; 015, L. J. Stallings, $146.30; 015, F. J. Steglic, $15; 001, M. H. Thrasher, $53.30; 507, C. N. Walter, $234.10; 027, L. H. Wilson, $30.10; 401, W. Wrieden, $15; 027, E. E. Yturralde, $188.60.

Lost & Found

CONVAIR

LOST—Man's ring, white gold, diamond setting with blue stone, vicinity north end Bldg. 1, Sept. 7. Reward. Contact LF employe benefits office.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Invention Disclosures

CONVAIR

HANSON—J. L., Dept. 962. Limited Access Rivet Bucking Bar.

JOHNSON—L. A., Dept. 420. Pliers for Co-Axial Connectors.

SALTER—E., Dept. 572. Tank Wall Insulation.

SCHRADE—N. G., Dept. 059. Transporting Vehicle.

STEPHENS—P. B., Dept. 581. Gaseous Propellant Conditioning System for an 02-H2 Propulsion System.

WOZNIAK—F. B., Dept. 950. Lifting Body VTOL Aircraft.

YATES—G. B., Dept. 584. Open Cell Insulation.

Retirements

CONVAIR

BUTCHER—Walter F., Dept. 031-0. Seniority date June 27, 1940, retired Aug. 29.

DANNIELS—Florence T., Dept. 101-6. Seniority date July 2, 1959, retired Aug. 30.

ERICKSON—Linder, Dept. 833-2. Seniority date July 13, 1949, retired Aug. 29.

ESPERTI—Elvira E., Dept. 400-6. Seniority date Nov. 25, 1955, retired Aug. 29.

MONTOYA, Emilio A., Dept. 250-5. Seniority date March 27, 1951, retired Aug. 29.

RIEHL—John A., Dept. 250-1. Seniority date Feb. 23, 1956, retired Aug. 29.

SMITH—Annette M., Dept. 170-8. Seniority date July 29, 1948, retired Aug. 29.

THORPE—David L., Dept. 250-3. Seniority date July 29, 1948, retired Aug. 29.

VAUGHN—Edwin F., Dept. 143-6. Seniority date March 12, 1951, retired Aug. 29.

Rider-Driver

CONVAIR

RIDE WANTED—From Palm and Imperial Ave., Lemon Grove to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Mike Irvine, ext. 1715 LF or (home) 463-4952.

Personals

CONVAIR

We would like to express our thanks to our many friends at Convair for their kindness, help and sympathy upon the recent death of Karen D. Brack. God bless all of you.

Coral Brack and family, Dept. 518-0

* * *

We wish to acknowledge with sincere thanks the kind expression of your sympathy, your thoughtfulness was appreciated.

Mrs. J. W. Shivers and family

* * *

I wish to thank all my friends and co-workers for their thoughtfulness for the warm farewell at my retirement.

Robert A. Greenlee, Dept. 31

* * *

We wish to thank you for your kindness and sympathy at a time when they were deeply appreciated following the death of John M. Davis, Dept. 143-1.

Martha Davis and family

Births

CONVAIR

TREECE—Daughter, Erin Linette, 6 lbs. 2 oz., born Aug. 30 to Lois A. and Thomas N. Treece, Dept. 059-8.

Deaths

CONVAIR

BROWN—William E., retired Dept. 142, Jan. 1967, died Aug. 13. Survived by his wife, Helen.

BUSHYAGER—Lee R., retired May 6, 1960, died Aug. 30. Survived by his wife, Nora.

DAVIS—John M., Dept. 143, died Aug. 27. Survivors include his wife, Martha, 4 sons, John, Kim, Jeremy, and George and 2 daughters, Martha and Patti.

FINLEY—G. L., Dept. 131, died Aug. 28. Survivors include his wife, Rosalee, 2 daughters, Rosalee and Mrs. Sharon Armstrong and 2 sons, William and Gerald and 2 grandsons.

HAYDEN—Lucille, retired June 20, 1961, died Aug. 23. Survived by her daughter, Dymple Grimme.

LEES—Forrest A., retired Dec. 31, 1968, died Sept. 7. Survived by his wife, Leabel.

PETERSON—Leonard N., retired July 29, 1966, died Sept. 3. Survivors include his wife Nadia.

SAPPINGTON—John D., Dept. 250, retired Aug. 2, 1968, died Aug. 21. Survived by his wife, Lorene.

SHIVERS—John, Dept. 027, died July 22. Survived by his wife.

WALKER—Arthur R., retired Nov. 30, 1963, died Aug. 21. Survivors include his wife, Pauline.

Electronic Mail Study Approved

(Continued from Page 1)

mail is directly transmitted to local offices, automatic sorters could produce bundles of mail for each route carrier.

The study may indicate receipts, notices, bills, and short routine announcements could be prepared and "mailed" to customers by computers.

A wide range of practical problems for mail transmission will be studied—along with the more glamorous electronic mail-delivery potentials. Designs that may be required for hardware and systems for electronic mail distribution will be generated.

Kenneth Morgan of Electronics-SD marketing will continue to maintain customer contact for their requirements and liaison. Dr. J. V. Ravenis will be study project manager within the research and advanced technology department.

Postmaster General Blount emphasized the exploratory nature of the study, noting it is designed to anticipate possibilities for the future. Although some possibilities for immediate improvement of service may result from the study, far-reaching changes are expected to require extensive research and testing and would not be widely used for several years.

Fifty nine per cent of today's mail volume is considered suited for electronic transmission — including general correspondence, bills and statements, and computer-generated mail output. Some computer-generated mail, such as that containing checks, will continue to require physical transportation.

Household - to - household mail constitutes only 14 per cent of the total and more than half of that is greeting cards and postcards.

Club Offers New Series of Courses

(Continued from Page 1)

Layman; You and Your Money; Introduction to Scientific Computer Systems; Modern Memory Methods; Patents, Trademarks and Copyrights Seminar; Reading Dynamics; Defensive Driving; Effective Listening Workshop; Space Technology for the Layman; The Seven Most Common Errors in Investing; and Spotlights, a series of one hour presentations on a variety of subjects.

For registration and information on the courses, call Helen Cook, ext. 3146 KM.

D. A. Menard Named To Mgt. Club Board

D. A. Menard, Dept. 141-4, has been appointed to the Convair Management Club board of control. Menard previously served as booster chief and manager of junior achievement.

Air Force Officers Report For 'Education-With-Industry' Duty

(Continued from Page 1)

duct and hardware systems familiarization.

After orientation there will be 12 weeks of departmental visits, meetings with department heads and staffs and discussion of departmental functions and responsibilities. The officers will then be given on-the-job assignments where they will be integrated into the organization on a working basis, given specific responsibilities and evaluated as management trainees.

Major Kuebler comes to Convair from Riverside, Calif. where he served as a B-52 radar navigator since April 1963. A native of North Dakota, he graduated from Montana State College in 1953, the same year he entered the Air Force. He was recalled to active duty in 1958.

Major Spallina's last duty station was McConnell AFB, Kan., where he served as chief, Procurement Division since 1964. A native of Chicago he studied business administration and marketing at the University of New Mexico and entered the Air Force in 1954. Except for his first year in the Air Force, Major Spallina has worked in the procurement field.

Captain Sullivan's last duty station was in Kansas where he served as missile combat crew commander on a Titan II ICBM.

A native of Missouri, Capt. Sullivan spent four years in the Navy before entering Southwest Missouri State College where he graduated in 1965. He entered the Air Force in 1965.

'Sea Serpent' Will Be Sold

"Sea Serpent," a General Dynamics 79-ton research vessel, and its mooring float and piles at the Aeromarine Test Facility in San Diego are being offered for sale.

The 84-foot wood-hull vessel, powered by two diesel engines and with accommodations for eight, has been used in acoustics studies in Alaskan waters, in conjunction with submarine activities up to 100 miles off the California coast, and for towing and support of the Star II submersible.

It has a boom with 5,000-pound lift capacity and is equipped with radar and loran navigational equipment.

Bids must be received by noon Sept. 22. Additional information, bid forms, and arrangements for inspection may be made through A. W. "Flag" Adams of the Aeromarine Test Facility, ext. 2101 LF.

Aging Biplane Shown In Miramar Exhibit

A PT-3 "Husky," built by Consolidated Aircraft 41 years ago, was exhibited last weekend (Sept. 13-14) at the Miramar Naval Air Station Air Show.

The 41-year-old biplane, one of 264 built by Consolidated, is a recent addition to San Diego's Aerospace Museum.

Engineer Forming Rainbow Girls Unit

Howard Spiegel, electronics engineer at Electronics-SD is organizing a Rainbow Girls youth organization for north San Diego County. The club will encompass the Del Mar, Leucadia and Rancho Santa Fe areas and will meet in Cardiff.

Girls in 7-12th grades aged 12-18 are eligible for charter membership. For information contact Spiegel at LF ext. 1223.

General Dynamics' Bond Record Praised

Roger Lewis, president of General Dynamics, has received several congratulatory letters on the 79 per cent participation record established by General Dynamics divisions and subsidiaries in 1969 U. S. Savings Bonds campaigns. Number of bonds purchasers through payroll deduction increased from 56,742 to 71,885.

J. M. Roche, chairman of the U. S. Industrial Savings Bonds Committee for 1969 and chairman of the board of General Motors, said he was delighted to hear General Dynamics had achieved a new record in Savings Bond participation.

"Your steady progress over the years and the increased signups in your recent campaign despite the interest-rate handicap attest to the excellent leadership you are giving your employes," he said.

"Progress such as you have reported will go a long way toward bringing our national effort to a successful conclusion . . ."

F. D. Hall, chairman of the New York City Share in America '69 Committee and chairman of the board of Eastern Airlines, also extended "sincere congratulations for the outstanding 1969 Payroll Savings Bonds campaign" conducted by General Dynamics.

"These results testify to the great deal of planning, work, and enthusiasm that obviously went into your campaign," he said. "You and the members of your campaign team certainly can be proud of a job well done."



IN ACTION—Canadair's CL-215 "water bomber" successfully fought forest fire in interior of British Columbia recently. Remarkable photo shows plane in action. Amphibian can scoop up six tons of water from lake in matter of seconds, drop it on fire and return for another load. Four of 10 ordered by France already are on duty. Province of Quebec has ordered 20.

Model of Office Building Tested in Wind Tunnel

General Dynamics' low-speed wind tunnel at Convair's Lindbergh Field plant was used recently to help architects and engineers determine how thick floor-to-ceiling glass walls must be in a five-story building under construction between Seattle and Tacoma, Wash.

The 360,000-square-foot Weyerhaeuser Co. headquarters building, scheduled for completion early in 1971, will be located on a 230-acre park-like site.

A 1/264-scale model used in the low-speed tunnel test was subjected to 100-mile-an-hour wind to determine pressure coefficients created on the west and south sides of the building by surrounding terrain and varying wind directions.

Changes in wind direction for the nine-run test were achieved by rotating the model in an 8 x 12-foot test section of the wind tunnel.

Forty nine pressure orifices, 43 in the south side and six in the west side of the model, were used to gather data for computer analysis.

Convair personnel conducted the test for Metronics Associates Inc. of Palo Alto, meteorological consultants for the architectual firm of Skidmore, Owings & Merrill in San Francisco.

Ed Crawford was wind tunnel operator, John Cormell was test conductor, Bill Stout handled instrumentation, and Warren Yates provided computer data reduction. Metronics Associates were represented by Boris Pavelka, meteorological engineer.

Magee-Bralla Inc., a San Diego display design firm, constructed the building model and its base, which simulated terrain in an area 1,584 feet in diameter, for use in the test.

The Weyerhaeuser building, facing north, will be located between two low hills. Floor dimensions will vary from 25,200 to 100,224 square feet.

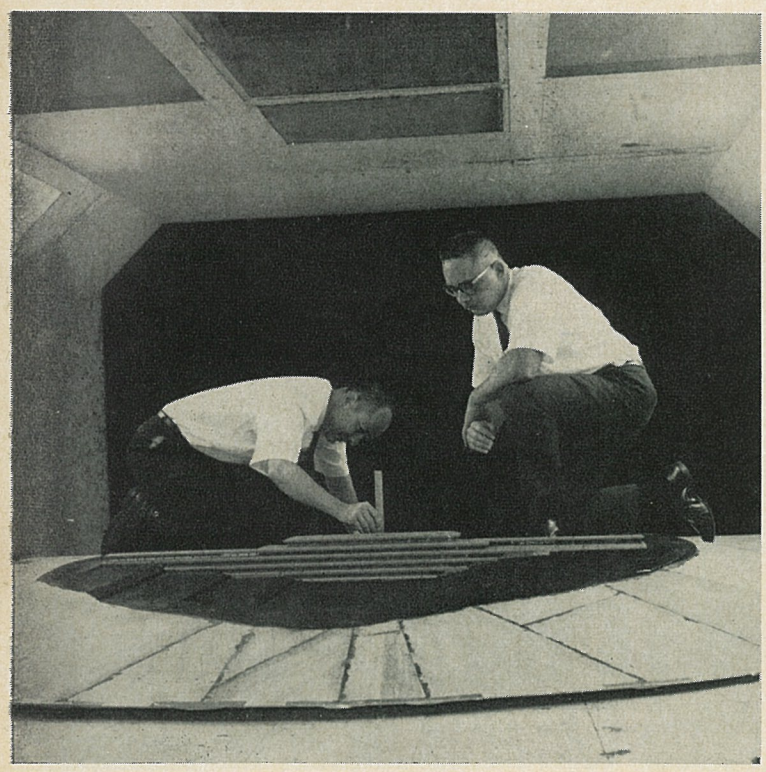
Public access to the building will be at fourth floor level, with employe parking at other levels. The building's north foundation will serve as a dam for a lake that will be 1,100 feet long and an average 350 feet wide.

The new headquarters will serve 37,600 Weyerhaeuser employes in 47 states and 17 nations who produce and market more than 5,000 different products from wood and wood cellulose.

Gene Deering, aerolab group engineer, said the Weyerhaeuser headquarters model was not the first building model to undergo tests in the low-speed tunnel.

A 1/192-scale display model of San Diego Stadium was run through tests in 1965 for Frank Hope and Associates, architects, to determine wind flow patterns. Smoke grenades were used then for photographic and visual observation.

Although the low-speed tunnel is normally used for General Dynamics product model tests, it also is used for testing of new automobile design models and models of other commercial products.



TUNNEL MODEL—John Cormell, left, Convair aerodynamics engineer, and Boris Pavelka, meteorological engineer for Metronics Associates, Inc., check model of Weyerhaeuser Co. headquarters building in General Dynamics' low-speed wind tunnel. Model was subjected to 100-mph winds in series of test runs. Test series was run in order to determine how thick glass walls should be to withstand effects of high winds.

Canadair and Convair Collaborate on V/STOL

Canadair is manufacturing and testing three CL-84-1 tilt-wing vertical and short-takeoff and landing (V/STOL) aircraft for the Canadian armed forces.

The aircraft, each with a gross weight of about 12,000 pounds, will be used by the armed forces to evaluate the tilt-wing concept for a wide range of military roles including utility transport, helicopter escort, search and rescue, and close air support.

The "dash one" program is an outcome of Canadair's successful development of the CL-84 prototype, which first flew in 1965. The CL-84-1s are similar to the prototypes but have a small increase in power and incorporate many detail modifications to improve handling qualities, safety, reliability, and maintainability.

Ground testing of the first "dash one" began last month and the first flight is scheduled before the end of the year. Fred Phillips, who started the original V/STOL work at Canadair in 1956 and was in charge of the prototype program, is CL-84-1 program manager.

Advanced design departments at Canadair and Convair are collaborating to develop versions of the CL-84 for military roles and on application of tilt-wing technology for larger and more powerful aircraft such as the light intra-theatre transport (LIT).

Dr. Blaine Parkin, LIT program manager for Convair, and Saul Bernstein, manager of research and advanced design for Canadair, coordinate these activities.

The LIT concept, under development for the past 18 months, would be larger and more powerful than the CL-84 prototype. It would provide the Air Force with a new capability to deploy, supply, and recover military forces from unimproved landing sites in forward battle areas.

Canadair was selected by the U. S. Air Force in April as associate contractor with Hamilton Standard on the advanced V/STOL propeller program, which will verify propeller technology for advanced tilt-wing applications such as LIT and which includes static thrust development, wind tunnel testing, and full-scale monocyclic propeller development and testing.

Monocyclic-pitch propellers would eliminate the present tail rotor for pitch control in hovering and low-speed flight.

Canadair has responsibility for wind tunnel testing of models with such propellers.

A wind tunnel test program with a model of the CL-84 fitted with monocyclic-pitch props was completed successfully recently at the General Dynamics' low-speed wind tunnel at Convair's Lindbergh Field plant.

The model was powered by a 90 hp electric motor which turned the three-foot monocyclic propeller at 5,500 revolutions per minute to represent full-scale conditions.

Tests on a model representing a large tilt-wing transport are scheduled next year.



BOMBS AWAY — Forest fire quenched as CL-215 drops water load in British Columbia interior.

College Recruiters Meet Their Goals

College recruitment programs during the 1968-69 school year resulted in 681 newcomers to General Dynamics divisions/subsidiaries.

Included were 541 holding bachelor degrees, 113 with master degrees and 27 with doctoral degrees.

All divisions / subsidiaries were reported to have met or exceeded goals.

ABRES Experimental Vehicle Launched

An experimental re-entry vehicle in the Advanced Ballistic Re-entry System (ABRES) program was launched down the Air Force Western Test Range Aug. 20 by an Atlas-F missile.

The Air Force Systems Command's Space and Missile Systems Organization (SAMSO) manages the ABRES program, aimed at developing more effective vehicles for the ICBM deterrent force.

Stromberg-Carlson Delays Stock Offer

Stromberg-Carlson Corporation, a subsidiary of General Dynamics Corporation, announced recently that it has postponed indefinitely a proposed public offering of 600,000 new shares of its common stock. A Stromberg-Carlson spokesman attributed the postponement to unfavorable market conditions.



LIFTOFF—Canadair-built CL-84 vertical and short-takeoff and landing aircraft is put through its paces. Three of the tilt-wing craft are being built and tested under contract from the Canadian armed forces.



HONOREES—Electronics-SD employes with pen sets received for outstanding individual Craftsmanship (front row from left) are Mrs. Martha Rankin, Mrs. Marie Ross, Mrs. Irene Duzyk, Pete Goetz Jr., and M. C. Hook. Others, left to right, are R. H. Nicholson, E. J. Elie, G. Q. Orndorff, P. M. Jepson, R. A. Giles, G. A. Andert, and D. C. Prim.

USIU Students At Mid-Point

About 60 Convair men attended an Aug. 27 party at Missile Park to celebrate reaching the halfway point in their work toward Master of Science in Management Science degrees through United States International University.

Henry Nulton of Dept. 145-1, who with Dr. Mark Nelson of the USIU faculty organized the party, said those attending had completed five of the nine courses required for the degree.

They will be taking "econometrics" and "operations management" courses during the fall quarter and will complete work for their degrees next year.

Convair currently has about 80 enrolled in the MSMS degree program.

David Chigos, coordinator for the program for the division's educational services section, said the group has a 3.3 grade point average and that there has been no attrition due to poor academic performance.

Schedule Set For Seminars

A series of six-hour management development seminars, designed primarily for new supervisors, has been scheduled by Convair's educational services section.

The seminars at Lindbergh Field will be from 9 to 11 a.m. Tuesdays through Thursdays Oct. 7-9, Nov. 4-6, and Dec. 2-4 in the Bldg. 4 conference room.

Those at Kearny Mesa will be from 1:30 to 3:30 p.m. Tuesdays through Thursdays Sept. 23-25, Oct. 21-23, Nov. 18-20, and Dec. 16-18 in the Bldg. 2 presentation room.

David Chigos, instructor, said increasing production through better utilization of time and management of a changing work force will be emphasized.

The seminars will combine information from several similar courses and related publications. Phone Chigos, ext. 2564 LF, for reservations.

Scientist Aids In Moon Study

Dr. Yosio Nakamura, Fort Worth division scientist in applied research laboratory, is helping to interpret data being sent back from the moon.

Nakamura's consultation was sought by Dr. Garry Latham of Lamon-Doherty Geological Observatory. Dr. Latham is principal investigator for the passive seismic experiment package (PSEP), which is transmitting data to Mission Control Center in Houston.

Dr. Nakamura, a seismologist, met Dr. Latham while the Fort Worth division man was on leave last year doing post-doctoral research at Columbia University.

"We're attempting to interpret the data from PSEP to determine whether the moon is still active," Dr. Nakamura said.

PLAQUE IN MEMORY OF VULTEE PLANNED

The Vultee Club will feature special Jerry Vultee memorial ceremonies Sept. 27 in conjunction with their 23rd annual reunion.

The founder of Vultee Aircraft will be commemorated with a bronze plaque at a site 12 miles from Sedona, Ariz. It was near here that Vultee and his wife of two months, Sylvia, died when his private plane crashed during a snowstorm Jan. 29, 1938.

The club consists of veterans of Vultee Aircraft and that division of Consolidated-Vultee Aircraft, Convair's predecessors.

The club's regular meeting will be Oct. 11 at 5:30 p.m. in the Los Amigos Country Club, Downey, Calif. For further information on either event contact Sandy Sandstrom, (213) 679-8024, Al Senechal, (213) 773-7800 or Wes Magnuson KM ext. 2501.



AIR PIONEERS — Jerry Vultee, one of Convair's founders, is shown with Charles and Anne Morrow Lindbergh. Vultee's plane Sirrius carried Lindy and wife "North to the Orient" in 1931.

Chief of Lunar Lab Will Address AIAA

Dr. Gerard P. Kuiper, director of the Lunar and Planetary Laboratory, University of Arizona, Tucson, will be featured speaker at the September meeting of the San Diego section of the American Institute of Aeronautics and Astronautics. He will speak on "The Planet Venus Compared with Earth, Mars, and the Moon."

The meeting will be at 6:30 p.m. Thursday, Sept. 25, in the Hanalei Hotel, Mission Valley. Non-members may attend. For reservations call Edith Trapp, ext. 3701 KM.

Microfilm Chapter Receives Charter

San Diego's chapter of the National Microfilm Association (NMA) received its charter — the 12th in the national organization—at its August meeting.

George H. Harmon, NMA president-elect and manager of information systems for Information International Inc. of Boston, presented the charter. Gus Bujkovsky of Convair's Dept. 563-0 is president.

Electronics-SD Singles Out Five

Five Electronics-SD employes have been presented individual Craftsmanship awards in the Zero Defects program for outstanding performance during the first half of 1969.

Each received an engraved desk pen set and a silver Craftsmanship pin. Award winners and their supervisors also were guests of D. C. Prim, Electronics-SD manager, and R. H. Nicholson, manager of quality control, for lunch at the Kona Kai Club.

Mrs. Irene Duzyk, Dept. 105 financial analyst, was honored for outstanding performance in issuing and establishing controls for payroll checks.

Pete Goetz Jr., Dept. 465 materials release analyst, was selected for his work in implementing a new inventory-check cycle in the purchasing system.

M. C. Hook, Dept. 513 spare parts analyst, was chosen for his effort in preparing more than 30,000 F-111 aerospace ground equipment maintenance engineering analysis records with a minimum of errors.

Mrs. Martha Rankin, Dept. 423 electronics assembler, was honored for outstanding performance in repair of delicate electronic assemblies.

Mrs. Marie Ross, Dept. 423 leadlady, was selected for her effort toward the department's reduction of solder defects and in training new employes in the Space-Ground Link System (SG-LS) assembly area.

Quality Requirement Edition Republished

NASA has published a new edition of the "quality program requirements" which require all NASA contractors to maintain an effective program of quality assurance beginning with the preliminary design of a system and continuing through actual flight operations.

The manual, "Quality Program Provisions for Aeronautical and Space System Contractors," supercedes the April 1962 edition. The new number is NHB 5300.4-(1B) April 1969 and is on sale for 55 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

Quality Engineer Article Published

"Quality Assurance" magazine has published an article by Richard S. Campbell, Dept. 141-0 manager of procurement reliability control, entitled "Procurement Quality Engineer (PQE) . . . A Profit Catalyst."

The article outlines the role of the procurement quality engineer in exerting constructive action on company profits.

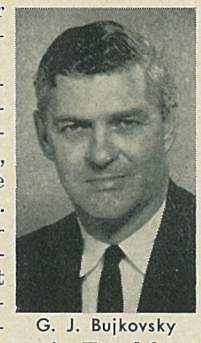
MAGNUSON TO TALK ON "PEOPLE POWER"

W. E. (Wes) Magnuson of Convair's Dept. 141-1 will discuss "people power" at a seminar on error-free production Sept. 26 in San Mateo. The seminar is sponsored by the American Society for Zero Defects and Defense Contract Administration Services Region—San Francisco.

Long, Hard Road

Ex-Janitor Represents Convair At Micrographic Congress

Gustav J. Bujkovsky arrived in San Diego 16 years ago from Santo Domingo, unable to speak English and a long way from his native Hungary, and found a temporary night job as a janitor at the Del Mar (Calif.) racetrack.



G. J. Bujkovsky

Now a Convair senior engineering procedures analyst, he will be one of six U. S. microfilm experts giving presentations next week at the International Micrographic Congress in Frankfurt, Germany!

It's a remarkable story.

Born in a section of Hungary that now is part of Romania, Bujkovsky earned degrees in engineering, law, and logistics from Budapest universities and was a Hungarian army captain in World War II.

Fleeing to Italy before the fall of Germany, Bujkovsky worked for the British Army and in 1948 was recruited by the Dominican Republic because of his engineering background. However, the tropics did not agree with his wife and he applied for U. S. immigration, with the help of G. J. Molnar, a classmate who was then working as a gardener in Del Mar, Calif. Mrs. Bujkovsky and their two children were admitted in 1951, though a technicality delayed his own application.

It so happened that Molnar's employer was a Col. Irving Salomon, a prominent Republican, and while Bujkovsky was on a vacation trip to Del Mar he met President Nixon, then campaigning for the vice presidency. He enlisted Nixon's help in entering the U. S. and was admitted on June 6, 1953. (He has sent flowers to Rose Mary Woods, Nixon's executive secretary, on each June 6 ever since!)

While working on his first job as a janitor, Bujkovsky improved his English by taping a list of 20 new words each night to his broomstick.

In addition to the racetrack job, Bujkovsky at various times worked as a dishwasher, cook, china and hosiery salesman, hotel auditor, market manager, drapery installer, manufacturing production manager, and plant manager for a coffee vending machine firm.

However, he had developed a strong desire to work for Convair and gained an interview after Sir John Harding, then governor of Cyprus and a personal friend, and Adm. William H. Standley, former chief of naval operations and a friend of his father, wrote Joseph P. McNarney, then president of Convair, in his behalf.

By then reasonably proficient in English, he was offered a position dependent upon receiving citizenship, which took place Sept. 5, 1958. He went to work the following Monday has since held several different positions.

Bujkovsky's presentation in Frankfurt will tell the story of Convair's conversion of its engineering data system to microfilm, which he helped plan and carry out in 1966-67.

Bujkovsky is president of the San Diego chapter of the National Microfilm Association, a member of the NMA national standards committee on computer-output microfilm, and president of the House of Hungary in Balboa Park.

Armed Forces Management Association Honors Gen. Babcock For Introducing Micromation

Gen. Jack E. Babcock, U. S. Army (ret.), director of international relations for General Dynamics International Corporation in Brussels, Belgium, recently received the top achievement award of the Armed Forces Management Association.

Gen. James Ferguson, commander of the Air Force Systems Command and national president of the association, presented the award at the society's 16th annual national awards luncheon in Washington, D. C.

Gen. Ferguson noted that Gen. Babcock, as the first director of management systems and data automation of the Army Materiel Command, introduced Micromation computer-to-microfilm system that saved millions of dollars for the command during the first year of use.

The Army Materiel Command, often called the largest business in the world, substituted for their impact printers these computer output recording systems, developed and manufactured by Stromberg DatagraphiX.

Applications of Micromation systems and their advantages, including speed, paper elimination and space saving, were described at the opening session of the association's meeting by Carl V. Shannon, president of Stromberg DatagraphiX.

The citation noted that "Gen. Babcock was a pioneer and advocate of management control in the Micromation and micrographics field. He gave much of his valuable time to presenting and teaching his discoveries in this field to AFMA chapters."



SCHOLARSHIP—Convair General Manager Jack L. Bowers, right, presents General Dynamics National Merit Scholarship winner certificate to Robert F. Nau, while parents, Mr. and Mrs. Richard A. Nau, look on. Senior Nau is manager of reusable space transport systems at Convair. Nau will enter Cornell University's six-year PhD. program. He was a winner this year at San Diego Science Fair and the American Chemical Society science contest.

Adventurers Planning Mt. Whitney Trip

CRA Adventurers will spend the Sept. 27-28 weekend at Mt. Whitney, highest point in the continental U. S.

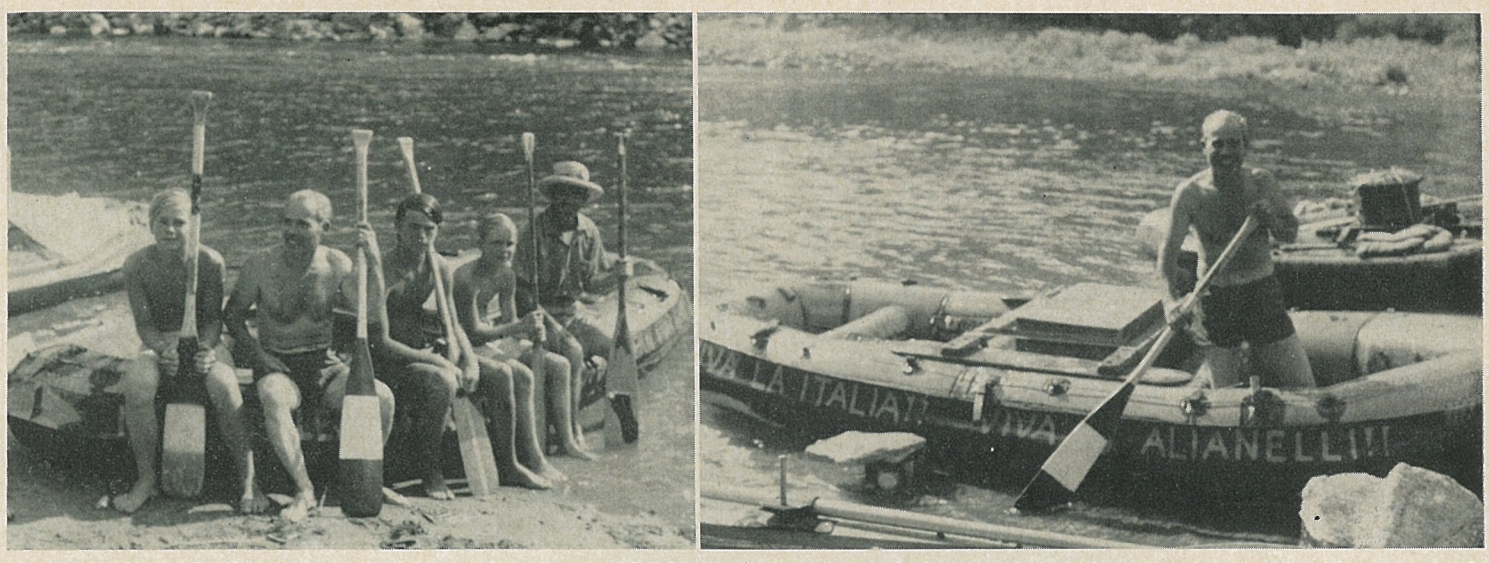
The group will drive to Whitney Portal, 13 miles west of Lone Pine and 11 miles by trail from the 14,496-foot Mt. Whitney summit, by midnight Sept. 26 and will roll out sleeping bags for an overnight stay to help them adjust to the high altitude.

More ambitious members of the group will leave at 9:30 a.m. Saturday for a four-mile backpack trip to Mirror Lake, where they will set up camp. They will hike the remaining seven miles to the summit the following morning.

Those staying behind at Whitney Portal can enjoy hiking, fishing, and photographing the scenic surroundings. Those making the trip are being advised to carry rain and mosquito protection gear.

Reservations are being taken by the trip leaders, Tony van der Akker (ext. 2228 KM or 582-7680) and John Anderson (ext. 1469 LF or 277-5568).

Plans also will be discussed at the Adventurers' meeting at 7:30 tonight in the CRA Clubhouse. Theme of the meeting will be "highlights of the past year," with members competing for awards for best photos and artifacts found on club trips.



RAPIDS SHOOTERS—Mike Alianelli, right, Dept. 835-1, is pictured during a trip down the River of No Return in Idaho. Each paddle was painted a different color and Mike's was color of the Italian flag—red, green and white. The lettering on the boat also indicates that Mike may have more than a passing attachment to Italy. At left, Mike, Explorer Scouts, and Wayne Zook, former Convair man, "take five." Scouts are from Loma Portal Explorer post.

Bike Club Slates Brown Field Ride

The CRA Bicycle Club will pedal to Brown Field (50 miles, round trip) Saturday, Sept. 27. The riders will meet at the Spring Valley Bank of America, corner of Sweetwater Road and Jamacha Blvd. at 7:30 a.m. Ride leader will be Bob Williams. For information call Dave Lukens, ext. 2881.

Works of Art Put on Display

More than 50 works of art were exhibited at the Convair employes Art Show Sept. 12 and 13 at CRA Clubhouse.

Best of Show was awarded to Don Herbert for his oil painting "Fog," which also won 1st prize for best oil.

Other winners and classifications were:

Oils: Neil Lamb, 2nd and Ben Penners, 3rd.

Pastels: Terry Harvey, 1st; Diane Herbert, 2nd.

Watercolor: Terry Harvey, 1st; Gabrielle Lavorin, 2nd and 3rd.

Drawing: Barbara Zeich, 1st.

Miscellaneous: J. Powell, 1st; Anna Freeby, 2nd; Don Herbert, 3rd.

Judges for the show were Austin Deuel and F. J. O'Connor.

Deuel owns the Lake San Marcos Art Gallery and has several paintings, which he produced as a Marine Corps artist in Viet Nam, hanging in the Marine Corps Gallery in Washington, D. C.

O'Connor is an art teacher in the El Cajon Adult School and an advanced planning artist for the State Highway Department.



WIN, PLACE AND SHOW—Three winners in Convair Employes Art Show at CRA Clubhouse display paintings. Center is Don Herbert, Dept. 553-2, 1st prize, oils and "Best of Show." Right is Neil Lamb, Dept. 102-0, 2nd place, oils, and left is Ben Penners, Dept. 553-1, 3rd place, oils.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Sept. 23. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meet tonight (Sept. 17), 7:30 p.m. Mt. Whitney weekend, Sept. 27-28.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Brown Field 50-mile ride, Sept. 27, 7:30 a.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB—Meeting Sept. 21, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meet Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS—Rehearsals Wednesdays, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m. YWCA, 10th & C Sts.

GARDEN CLUB—Meeting Oct. 1, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Whispering Palms tournament Sept. 27-28.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE—Workshop Sept. 19, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturday and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Sept. 28, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Sept. 18, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIFLE CLUB—Shoot Sept. 24, 7 p.m. Junior shoot Sept. 21, 9 a.m. Gillespie Field Range.

ROAD RUNNERS—Meeting Sept. 25, 7:30 p.m., Gillespie Field Clubhouse.

SAILING—Meeting Sept. 24, 7:30 p.m.

SCULPTURE—Workshop sessions each Monday, 7:30-10:30 p.m.

SPECIAL EVENTS—Small boat piloting and seamanship class starts Sept. 25, 6:30-9:30 p.m.

SQUARE DANCE—Dance classes start Oct. 7, 8-10 p.m. Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting Sept. 25, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TOURS—Los Vegas trip in November.

WIVES CLUB—Family potluck dinner Sept. 27, 6 p.m. Potluck luncheon Sept. 24, 10 a.m.

He's Got Faith!

It Takes True Grit to Shoot Rapids, When You Can't Swim!

Fifteen years ago Robert Mitchum took Marilyn Monroe down the fabled "River of No Return" in a movie of the same name.

Mike Alianelli, Dept. 835-1, made the same trip last month but he did his rapids shooting and overnight camping with 17 youngsters and five other men — no ladies allowed.

The river trip between Salom and Riggin, Idaho, was one of the annual expeditions made by an Explorer Scout troop from Loma Portal.

Shooting three to five rapids a day, the group made the 100 mile trip in five days, camping out on sandbars. They travelled in rafts donated by the Navy and were accompanied by a guide.

Alianelli said only one raft flipped over during the trip and no one was hurt but he began to get a bit worried after that because of the 23 persons he was the only non-swimmer!

The trip from San Diego, down the River and home took 10 days and cost each member just over $42 for transportation, guide, food and side trips.

Alianelli, who has been with Convair since 1936, is enthusiastic about outdoor living and working with young people. Also on the trip was Wayne Zook, a former Convair man, who made all the arrangements in his role as scoutmaster.

Sea World Night Scheduled Oct. 3

Convair Management Club will sponsor a night at Sea World from 7 to 11 p.m. Friday, Oct. 3, to raise scholarship funds. All shows and attractions will be open. Admission will be limited to 3,500.

Tickets are $1.50 for adults and 50 cents for children 16 and under. They may be obtained at Kearny Mesa from Management Club bosters and at Lindbergh Field from Barbara Freeman at the vendors' office in the Bldg. 5 lobby or Vonda Fusco at employe benefits in Bldg. 16.

Chargers-Jets Game Tickets Available

Tickets for the San Diego Chargers-New York Jets football game at 1 p.m. Sept. 28 are on sale at employe benefits outlets.

Tickets are $4.50 and $6. Employes have been urged to purchase tickets early as the game will probably be a sell-out.

In addition to the tickets, 200th anniversary license plate holders are on sale for $1.75 a pair.

Ballroom Dancing Series Will Begin

Beginning ballroom dancing classes will begin Sept. 22 from 7:30-9 p.m. at CRA Missile Park picnic shelter.

Twelve sessions will cover three basic and four Latin steps at a cost of $18 per couple. Instructor is Bob McGlade and registration is at the first class. For information contact Royce Riggan, 420-3775.

SOCCER PLAYERS SOUGHT FOR TEAM

Convair's Jean-Claude Meslin, Dept. 401-4, is seeking soccer players for a team forming for play at Robb Field in the Ocean Beach Athletic Area. For information contact Meslin at LF ext. 2569 or 282-7800. This is not a CRA sponsored activity.

Group Vegas Trip Depends on Interest

Employes interested in a group trip to Las Vegas may contact CRA, ext. 1111, for information and reservations. The trip is not finalized and will depend on interest shown.

Price for the weekend trip is $75 per person. This includes round-trip air travel to Las Vegas, transportation and baggage handling to and from the Las Vegas airport, hotel accommodations at the Tropicana Hotel, a dinner-show, and a buffet dinner.

The trip is tentatively scheduled for sometime in November with departure after 6 p.m. Friday and return Sunday afternoon.

Navy Metalsmith Experience Helps Cut Costs of Forging

H. M. "Herb" Sturdyvin, a Dept. 820-0 senior buyer, during the past 18 months has helped Convair division save $4 million.

He's been credited personally with $2,300,000 in savings from cost reduction and value control projects and another $20,000 from an Employe Suggestion.

The rest of the $4 million total has been credited to value engineering and design engineering personnel with whom he has worked on cost reduction and value control projects.

Sturdyvin, a nine-year Convair employe, is an expert on forging and has used his knowledge of forging and material stock sizes to trim production costs for numerous parts for F-111, DC-10 and other programs.

One proposal by Sturdyvin and design engineering personnel alone will reduce production costs $2,136,000 by substituting forgings for machined billets in F-111 SRAM pylon support fittings.

In another case, Sturdyvin found material billets being ordered for machining of F-111 upper beams were three inches larger than were necessary. A resultant change in size of material being ordered reduced machining time and freight charges as well as material purchase cost. An $84,700 saving will result.

"I'm always looking for a more efficient way to do the job," he said. "The savings in almost every case have resulted from joint efforts with the design and value engineering groups. Many also have involved considerable assistance from supplier firms."

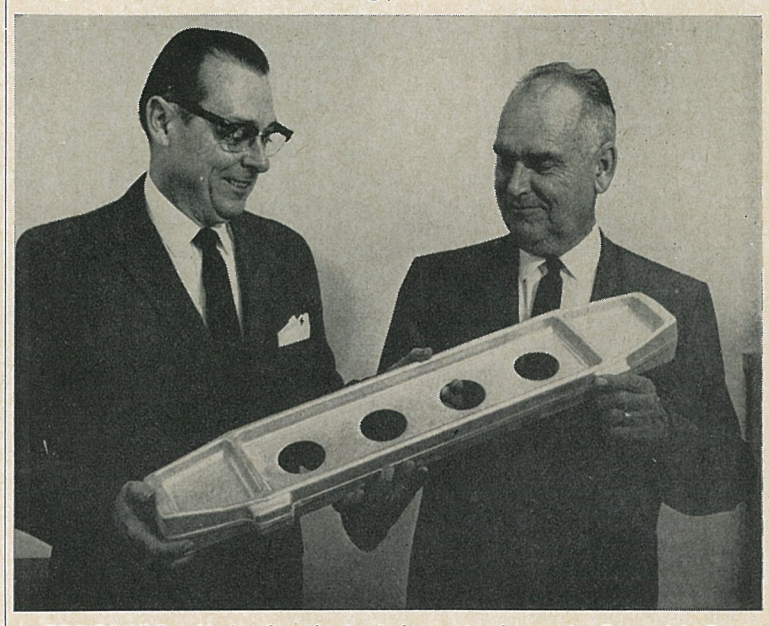
In addition to routine duties as a senior buyer for the material department, he serves on the DC-10 forging design review team.

Sturdyvin acquired his basic forging skills and knowledge in the Navy, where he spent 20 years and worked his way through the ranks of chief metalsmith, warrant machinist, and commissioned status. His Navy duties ranged from serving as metalsmith on repair ships to chief engineer on the fleet tanker Neches.

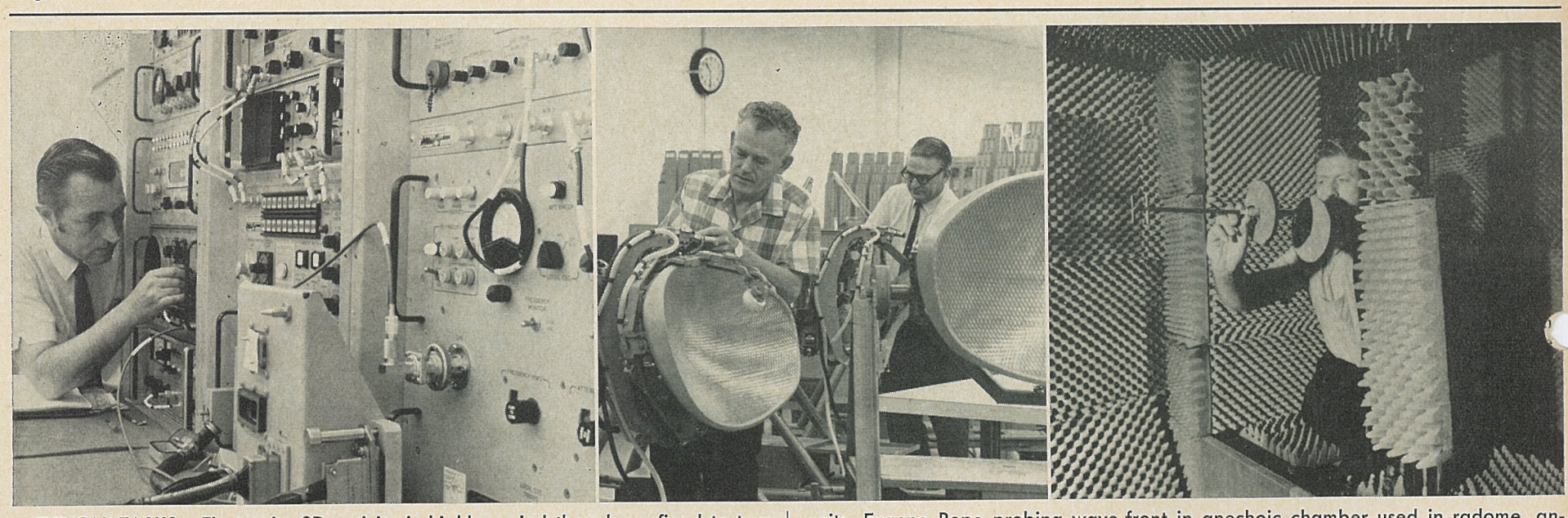
Wives Will Sponsor Potluck at Park

CRA Wives Club will sponsor a family potluck at 6 p.m. Saturday, Sept. 27, at Missile Park.

The monthly potluck lunch will be at noon Sept. 24 in the CRA Clubhouse. For information, call Mrs. Robert Browning, 295-5369.



FORGINGS—H. M. Sturdyvin, left, senior buyer in Convair's Dept. 820-0, discusses forgings with Lyle Wood, manager of outside production and work authorization administration. Forging is typical of those procured for various programs.



TYPICAL TASKS—Electronics-SD activity is highly varied though confined to two major product lines. Photos, from left, show Don R. Greenawalt checking F-111 doppler radar test station; Stanley Adams (front) and W. L. Tate working on REINS units; Eugene Rope probing wave-front in anechoic chamber used in radome, antenna, and holography research. New systems and specialized "hardware" are being developed for military and non-military uses.

Electronics-SD Develops Variety Of Military and Civilian Products

Electronics division's San Diego operations, with 950 employes and 280,000 square feet of space in four buildings at Lindbergh Field, is one of four operating elements of the Electronics division. The San Diego operations (Electronics-SD) expects to reach about $25 million in systems and product sales this year.

With capability in total systems design and specialized hardware development, Electronics-SD is engaged in a variety of system programs and new product development both for defense and non-defense applications.

Major product lines are sensor (including airborne radar, ground surveillance radar, and special programs) and instrumentation (including range instrumentation systems, spaceborne electronics, and information systems).

Electronics-SD has produced more than 100 Radar Equipped Inertial Navigation System (REINS) units for Navy RA-5C aircraft and has 48 under contract for delivery in 1969 and 1970.

Small lightweight AN/APN-170 Terrain Following Radar (TFR) systems, 33 inches long and eight inches in diameter, have been produced since 1966. A total of 165 have been delivered to the United Kingdom for use on Royal Air Force aircraft and several have been used on classified U. S. programs.

The TFR system, weighing only 58 pounds, can be nose or pod mounted and can enable any controllable-flight vehicle to be flown at earth-hugging altitudes under low visibility conditions. Ellsworth Snyder and Roger Olson are key technical personnel on the program.

Electronics-SD also is working on TFR variations for possible use in a new Air Force missile program.

New developments being carried forward under general supervision of T. G. Hame, manager of research and technology, include the Forward Looking Light Attack Radar (FLLAR) system. This radar can provide simultaneous terrain avoidance, terrain following, and ground mapping. Obstacles in the flight path above selected flight altitude can be shown in a white "iceberg" display or three-dimensional elevation and range contours can be shown in a "shades of grey" display.

Such terrain displays can permit blind flying inside canyon walls. Air-to-ground ranging, ground moving-target indication, airborne instrumented landing assist, weather mapping, and beacon navigation capabilities can be added. John Hakes is project manager.

A "breadboard" FLLAR unit has been undergoing tests at the Naval Electronics Laboratory Center in San Diego and program personnel hope to have the system tested next year on the Army's twin-engine Mohawk all-weather reconnaissance aircraft. FLLAR also has potential missile applications.

One of Electronics-SD's smallest "packages" is a microminiature radar altimeter for precision altitude measurement that is about the size of two cigarette packages and weighs slightly more than a pound. Bill Sadler and Alex Christie have been in charge of its development.

An AN/PPS-10 ground surveillance radar, weighing less than 10 pounds, has been undergoing field testing in Viet Nam (**GD/NEWS, April 30**). George Eaton is program manager.

A tunnel-detection radar being developed for the Army's Research and Development Center in Fort Belvoir, Va., also is being tested in Viet Nam after being developed under Sadler's direction.

The WEED intrusion detection system senses man-size objects entering its omnidirectional field and can be monitored by remote receivers. It can be used either as a security or intelligence device.

More advanced systems based on the WEED concept are being developed now for military uses. A metal detector under development also is an outgrowth of the WEED program. John Gehman was given one of the division's inventors awards in May, 1969, for developing the WEED concept.

Artillery and mortar location detectors are among other new products under study. Award of a research contract from the Air Force is expected for expanded study of new detection and location techniques developed by Jim Crooks.

Personnel at Electronics-SD have built more transponders for missile and space applications than any other firm in the U. S. — ranging from those used on early ICBMs to those for the Air Force MISTRAM missile trajectory measurement system and the current Space-Ground Link System (SGLS) units for use in classified Air Force programs.

Electronics-SD also is known as one of the nation's leaders in development of radomes — largely through the efforts of Gus Tricoles — and has several current study, development, and test contracts for new advanced techniques in aircraft and missile radome design.

Electronics-SD personnel, many of them formerly with Convair, developed the AZUSA tracking system for the Air Force Eastern Test Range and the GLOTRAC networks for NASA. In addition, precision satellite tracking technology and hardware have been developed for the NASA-Goddard Range and Range-Rate system and for the Apollo Instrumentation Ships.

Production of aerospace ground equipment (AGE) for the F-111 program under subcontracts from Fort Worth division and Electronics-Rochester also is a major activity at Electronics-SD.

Apollo command module latch assembly installations have been fabricated under subcontract from North American.

Photofabrication of electronic circuitry and forming of many small "hardware" parts is an important part of the organization's production activity.

Electronics-SD's information systems work is highly diversified, covering military and non-military applications, and involves systems analysis, design, and production of equipment to interface between computers and displays.

Largest current effort in this product line is development of the PANAMAC world-wide reservations system and data system for Pan American Airways. Initial configuration of hardware is being developed under a $650,000 contract. Richard Brenning is project manager.

D. M. Festa, manager of marketing and business information systems, conducted a two-week scientific management systems course in July for a management systems task force at Miramar Naval Air Station, San Diego.

Other information systems products include precision time generators for tracking and data processing systems and teletype address reading devices for teletype circuit message control.

Electronics-SD has 346 engineering personnel, 376 in operations departments, and 232 in support functions.

Prim Manages Electronics-SD

Donald C. Prim, manager of Electronics division's San Diego operations since 1964, served with General Dynamics' former Astronautics division from 1954 to 1964 in positions ranging from senior electronics engineer to program director-electronic programs.



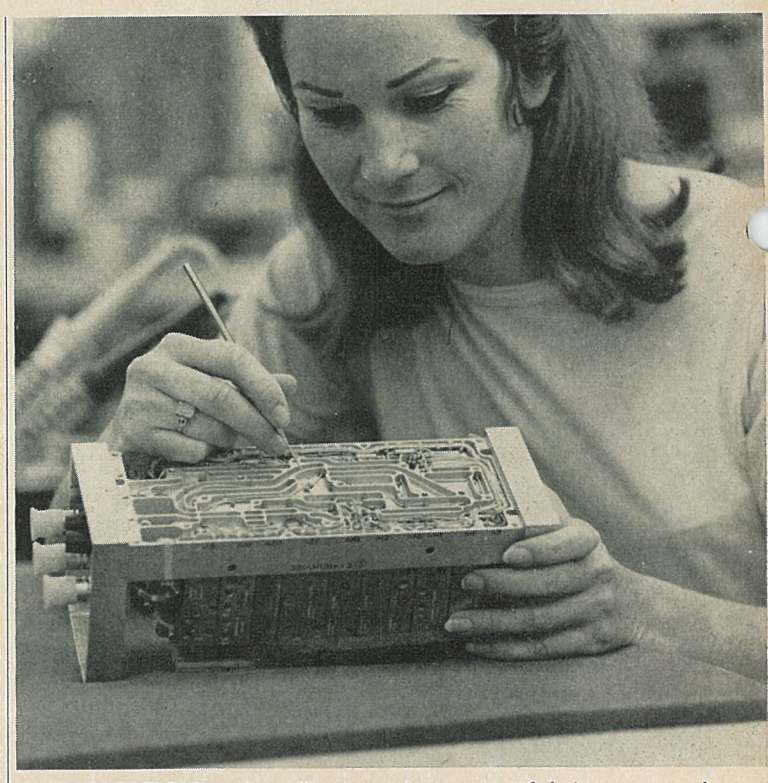
D. C. Prim

During that time, he helped design Atlas missile checkout equipment and supervised development of the AZUSA Mark II tracking system, the GLOTRAC tracking system, the OV1 scientific satellite, and LUNAR and MISTRAM transponders.

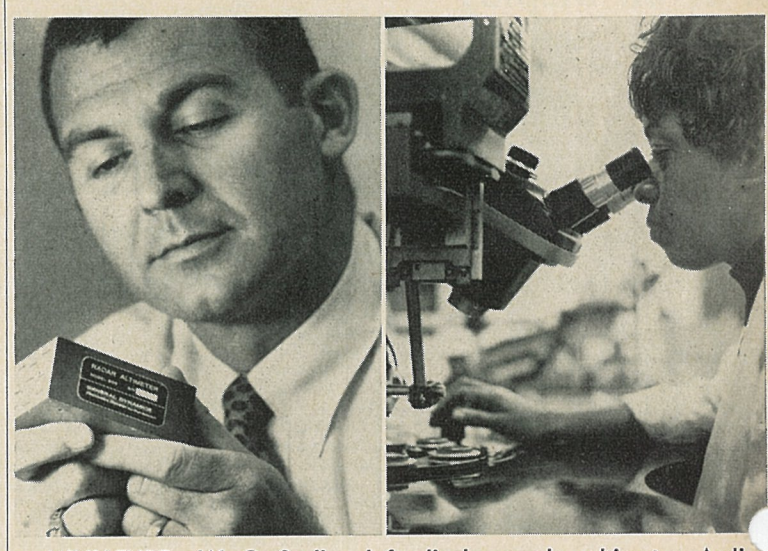
As a Convair design engineer from 1951 to 1953, he worked on the DORAN and AZUSA Mark 1 tracking systems, the Atlas radio inertial guidance system, and the F-102 fire control system.

Key personnel on Prim's Electronics-SD staff include F. J. Hickey, assistant to the manager; D. A. Rich, legal counsel; J. F. Langston, long-range planning; T. H. Scholder and F. P. Stoklas, programs managers; G. W. Leesch, industrial relations manager; E. J. Illes, marketing manager; T. C. Courington, contracts manager.

C. H. Wychgram, assistant controller; R. H. Nicholson, quality control manager; G. G. Prentice, operations manager; and R. F. Reese, engineering director.



FABRICATION — Pat Scates, electronics fabricator, works on Space-Ground Link System (SGLS) receiver.



MINIATURE—W. G. Sadler, left, displays radar altimeter; Ardise Rawlins of microcircuit lab, right, uses chip bonder to attach tiny component to miniature circuit boards.



ASSEMBLY—Circuit boards and small subassemblies are prepared for REINS units in electronics assembly area. Forty-eight units on order will bring total to more than 150.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 1, 1969

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Do upgrade review request cards really do any good?

A—The system provides an employe with the opportunity to be evaluated for a higher rated job. If found qualified he is placed on an upgrade review list and considered for openings that may become available. The system works well.

★ ★ ★

Q—Under the guise of "meeting production requirements" shift times can be subject to manipulation. Does Convair confirm the reasons for a change?

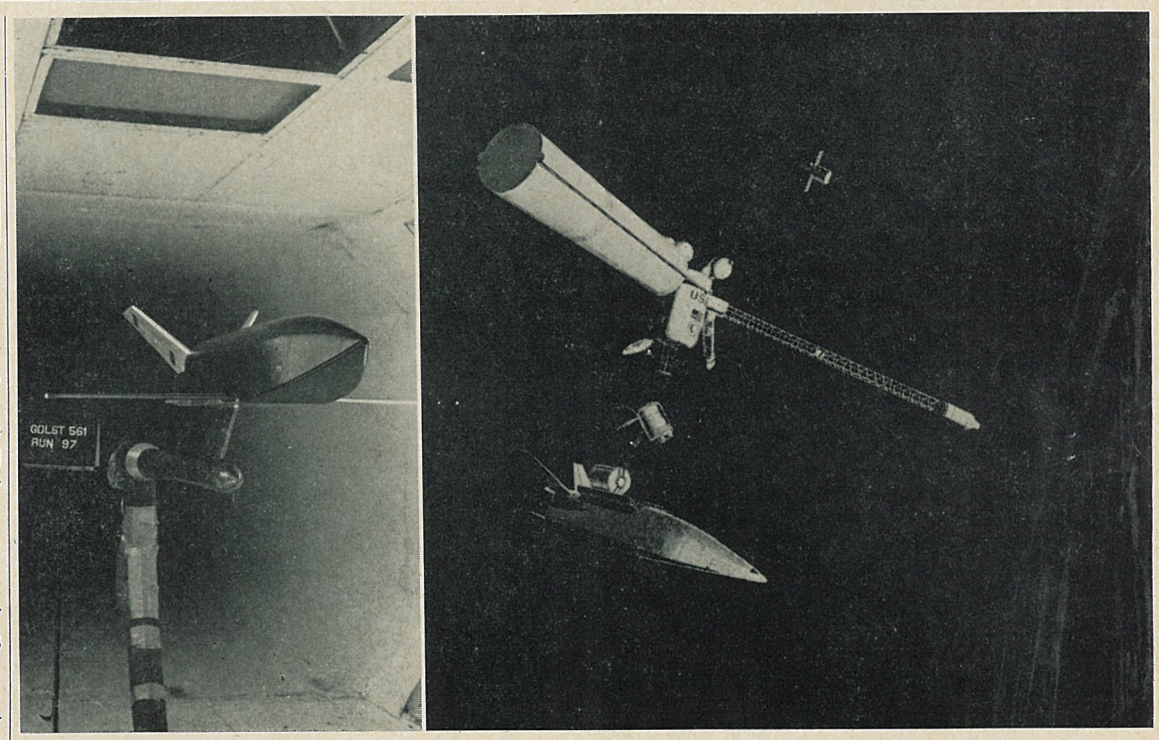
A—Yes. Many factors are considered before a change is approved. These include such conditions as parking, traffic, lunch periods.

★ ★ ★

Q—I've noticed many cars parked in lot 6 at LF plant without decals. How come?

A—Lot 6 at LF is a controlled lot with a two-fold purpose, to accommodate employes who qualify as card holders, and to serve visitors and vendors conducting business with Convair. Visitors and vendors are not issued decals but receive a token with which to operate the exit gate.

(Continued on page 4)



SPACE SHUTTLE—At left a model of space shuttle vehicle undergoes testing in Convair's low speed wind tunnel while at right a similarly configured vehicle is shown as it might look delivering experiment modules to space station of future.

First FACI Conducted On FB-111 Radar Test Set

Electronics-SD hosted its first First Article Configuration Inspection (FACI) Sept. 16-17 on its first production unit of a doppler radar test set for the FB-111.

The electronic test set, one of eight identical aerospace ground equipment units being produced by Electronics-SD, will be used to test and pinpoint problems that may develop in navigational radar sets for the bomber version.

Ronald Voell, FACI team chairman for Electronics-SD, said the FACI teams verified matching of drawings, planning, and hardware for the test set and checked operation, data acquisition, and control procedures.

Other team chairmen were Hal Goerge of Defense Contract Administration Services (DCAS) and Frank O. Young of Fort Worth division.

Voell said Electronics-SD has been commended by Fort Worth division and DCAS for professionalism of the FACI and on quality of the test set design and data. Kermit Seely was program manager for the set, which has been under development and fabrication 2½ years.

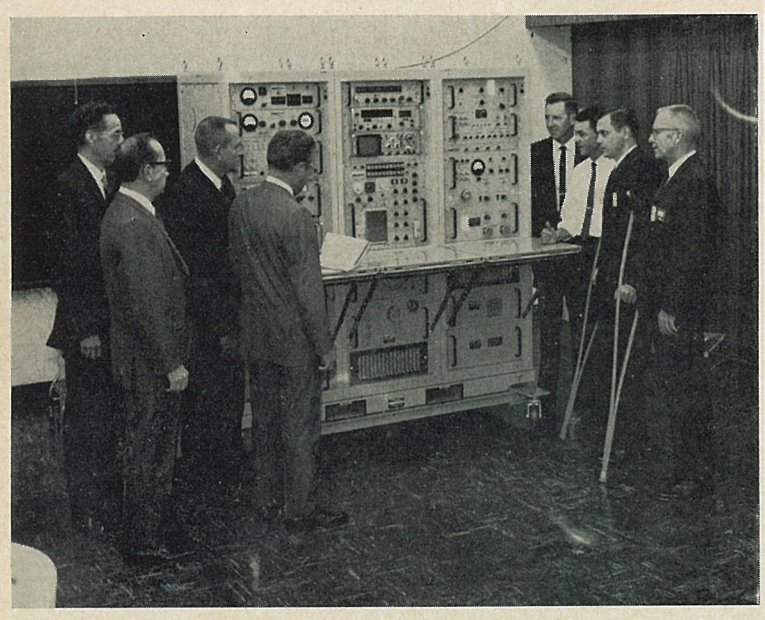
FACI participants, by organization, included:

DCAS — Hal Goerge, Ralph Glatfelter, C. E. Lemon, A. H. Spencer.

Electronics-Rochester — R. D. Foster.

Fort Worth — F. O. Young, A. A. Norman, A. H. Mandale.

Electronics-SD — A. N. Branon, C. M. Hooper, H. M. Williams, Helen Willett, R. W. Edge, M. C. Nesbit, L. B. Lipsca, R. W. Thomas, R. D. Sindelan, R. F. Voell, W. W. Curtis, J. J. Murphy, I. F. Thompson, K. E. Smith, H. E. Sommers, E. R. Peters, K. A. Seely, J. H. Huprich, G. F. Arndt.



INSPECTION—Looking over FB-111 doppler radar test set during recent First Article Configuration Inspection at Electronics-SD are, from left, Frank Young, Fort Worth; Ray Foster, Rochester; Hal Goerge, DCAS; Arlo Norman, Fort Worth; and John Murphy, Clyde Hooper, Ronald Voell, and Kermit Seely, all Electronics-SD.

Con-Trib Membership Upped to 92 Per cent

The Convair Employes' Con-Trib-Club drive last month resulted in boosting employe participation to 92 per cent.

Jack L. Bowers, Convair general manager, said he was pleased with the results.

"Once again Convair employes have demonstrated they understand problems facing the community and are ready to support, through the Con-Trib-Club, the agencies which serve the community," he said.

The drive increased the number of "Fair Share" givers by 1,436, a 30 per cent advance. Overall membership was increased 15 per cent.

In comparison with 1968 figures, there was a six per cent increase in total membership.

Department results are:

Contracts, legal, etc., 94 per cent; financial, 91; industrial relations, 95; reliability, 95; material, 99; launch vehicle programs, 91; engineering, 90; operations, 90; ETR, 94; VAFB, 96.

★ ★ ★

The Convair Employes' Con-Trib-Club made a total $17,847 in grants to local health and service agencies during September.

Included in the total was a $5,440 grant to the Mayor's Council on Youth Opportunity, $2,500 to the Arthritis Foundation and $2,000 to the Cystic Fibrosis Research Foundation.

Other grants were: $510 to the Tuberculosis and Health Association of San Diego; $300 to Neighborhood House; $1,872 to the YMCA for Youth Lifeline Program; $1,000 to Crossroads Foundation; $1,500 to City Rescue Mission; $800 to South Bay Pioneers; $1,000 to Children's Dental Health Association of San Diego; and $925 to Lions Sight Preservation Clinic.

Mfg. in Space Study Extended

Convair will sudy potential in-space manufactuirng processes and related fundamentals under a contract from NASA Marshall Space Flight Center. The $93,000 contract runs through Mar. 31, 1970.

The study will define feasibility and effectiveness criteria which will be applied to orbital workshop and experiment module projects.

According to Dr. W. H. Steurer, program manager, a hopeful by-product of the study will be the establishment of requirements for future space activity.

(Continued on Page 2)

White House Studies New Space Plans

Recommendations of the Presidential Task Force on Post-Apollo Space Programs, made public by the White House last month, tie in with several current Convair study programs.

One proposal was for development of a space shuttle vehicle to move men and equipment to and from earth orbit.

Convair was a pioneer in development of the space shuttle concept and was one of the first firms to advocate use of a vehicle with all reusable stages. The division currently has parallel NASA and Air Force contracts for space shuttle studies to be completed this month.

The space shuttle could be used to supply a space station (another project recommended by the task force) and to deliver, inspect, and maintain satellites in orbit.

Convair also is studying feasibility of orbit-to-orbit space vehicles, space experiments modules, in-space manufacturing processes, and satellite-using information-transfer systems.

Orbit-to-orbit vehicles would take payloads from lower to higher earth orbits, or the reverse, and would be designed for economical operation in space.

Experiment modules could be used in conjunction with the space station or independently.

Space shuttle vehicles could be used to support in-space manufacturing and to service communications satellites.

Engineers Begin Work On 'Heavyweight' DC-10

Convair has received a time-and-material contract from McDonnell Douglas for engineering of fuselage changes to accommodate increased gross takeoff weight of the DC-10-20 and DC-10-30 intercontinental tri-jetliners.

Max Yale, Convair DC-10 engineering manager, said the contract covers approximately 68,000 manhours for engineering design changes to accommodate the C-D and F-G fuselage sections to increase gross takeoff weight capabilities by almost 30 per cent — from 410,000 to 530,000 pounds.

DC-10 series 20 and 30 aircraft will have the same external fuselage dimensions as the DC-10-10 but will carry additional fuel in their center wing sections for long-range flight.

The new versions will be equipped with more powerful engines. A third main landing gear, preplanned in initial DC-10 design activity, will be added.

Engineering under the new contract will be accomplished during a period of about nine months.

Approximately seventy engineers will be required on the design tasks, about half in structural design and the remainder in stress, weights, checking, release, and loft groups. Jim Whiston will be in charge of structural design and Ed Hansard of stress engineering tasks.

Yale said Convair also hopes to provide engineering assistance for McDonnell Douglas on special customer-requested modifications for DC-10s.

Orders and firm options have been placed for 184 DC-10 liners and convertible freighters.

ICBM Launch In '59 Recalled

Sept. 9 was the 10th anniversary of the first operational launch of an Atlas ICBM.

The ICBM, Atlas 12-D, was launched by an Air Force crew at Vandenberg Air Force Base Sept. 9, 1959 and travelled 4,300 miles to a target in the western Pacific.

A few days later, Maj. Gen. David Wade, then commander of the first Missile Division at Vandenberg, announced that "an Atlas ICBM squadron at Vandenberg is now integrated into the Strategic Air Command emergency war plan and is ready to launch on 15 minutes notice."

Log Book Entries

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Sept. 12.

Dept. 780, H. D. Akers, 143, D. G. Longbottom, $7.50 each (joint award); 508, W. K. Alexander, $74.90; 016, M. V. Archibeque, $15; 131, E. N. Bailor, $31.70; 059, L. Budzynski Jr., $87.80; 027, C. W. Burnham Jr., $82.10; 143, D. G. Clark, $15; 420, C. C. Cope, $19.90; 250, S. Crane, $15; 420, C. F. Devin, $36.80; 836, C. D. Duncan, $15; 780, E. F. Echols, $47; 027, H. A. Gonzales, $39.50; 780, G. Johnston, $30 (two awards); 400, P. A. Knowles, $71.70.

Dept. 146, V. J. Lima, $342.90; 401, G. Loch Jr., $15; 027, J. F. McClure, $15; 002, J. W. Nesseim, $15; 027, B. E. O'Brion, $144.90 (two awards); 565, J. F. Ornelas, $665.50; 049, W. C. Pahl, $15; 027, J. H. Parsons, $73.60 (two awards); 460, E. Puett, $591.90; 833, J. E. Rath, $111.10; 015, W. F. Sager, $56.20; 045, K. J. Schiel, $15; 143, P. Sletnar, $286; 001, M. H. Thrasher, $237.70; 832, N. White, $25; 518, R. J. Zenger, $91.

Births

CONVAIR

HIRSCHFELDER—Son, Chester John III, 8 lbs., born August 31 to Janice (Dept. 840) and Chester John II.

Deaths

CONVAIR

BIEKN—Ethelbert H., Dept. 401 retiree, Aug. 16, 1963, died Sept. 12. Survived by his wife, Lydia.

BROWN—William E., Dept. 142 retiree, Jan. 31, 1967, died Aug. 13. Survived by his wife, Helen.

LINDSAY—Robert G., Dept. 218 retiree, July 6, 1961, died Dec. 26, 1968. Survivors include sons, Norton and Robert.

LORENTSON—Alexander, Dept. 14-4 retiree, Jan. 29, 1965, died Sept. 14. Survived by his wife, Louise.

MULLICAN—J. E., Dept. 401 retiree, June 3, 1964, died Aug. 23. Survived by his wife, Lucy May.

WILLIAMS—Henry L., Dept. 732-0, died Sept. 20. Survivors include his wife, Wilma, 3 sons, Farrell, Michael, and Dale.

STAGER—Stanley R., Dept. 14-4 retiree, Jan. 31, 1961, died Aug. 16. Survived by his wife, Claribel.

Papers Presented

CONVAIR

BOYCE—Glenn D., Dept. 967. "Coding and Signal Selection for the Narrow-Band Data Relay Satellite." Wescon '69, San Francisco, Calif. Aug. 19-22.

Papers presented at the AIAA/AAS-Astrodynamics Conference, Princeton, N.J., Aug. 20-22.

ADAMS—J. D., Dept. 583. "The Evolution of Eccentric Satellite Orbits."

HAZELRIGG—G. A., Dept. 583. "Analytic Determination of the Adjoint Vector for Optimum Space Trajectories."

Papers presented at the AIAA/Aerospace Structures Design Conf., Seattle, Wash., Aug. 4-5.

BOCK—E. H., Dept. 952. "Design of Low Conductive Light Weight Support Strut for Cryogenic Propellant Tanks."

NEUBERT—H. D., Dept. 512. "Design and Analytical Study of Composite Structures."

Papers presented at the AIAA/Guidance Control and Flight Dynamics Conference, Princeton, N.J., Aug. 18-20.

McNAMARA—Robert, Dept. 966. "Application of State Variable Techniques to the Design of Digital Flight Control Systems."

WINKLER—M., Dept. 986. "Analytical Targeting Techniques for the Mariner Mars 1969 Mission.

Personals

CONVAIR

We wish to express our appreciation for all your expressions of sympathy in the passing of our loved one, Harold Shaulis.

Mrs. Harold Shaulis & family
Mr. and Mrs. Eugene Shaulis
Mr. and Mrs. Larry Haley

We would like to convey our deep appreciation to the many friends in engineering, graphic reproduction, plant engineering and interceptor group for their kindness and sympathy at the recent loss of our mother.

Marion Smith, Dept. 524-5
Francis Wendt, Dept. 518-0

We would like to express our deep appreciation for the many cards and telephone calls of sympathy and beautiful flowers for our husband and father, J. E. (Mike) Mullican.

Mrs. J. E. Mullican
Mrs. Lola Hite
Mrs. Eulala Thomason

It was very kind of you to send the beautiful flowers. Leonard cherished his friends and you were loyal to him in so many ways. For this I am most grateful.

Nadia Peterson

Our thanks to all of you for the beautiful spray of flowers and all the consideration you have shown.

Rose Finley and family

Retirements

CONVAIR

BENDER—John A., Dept. 250-3. Seniority date June 22, 1960, retired Sept. 5.

CLEVELAND—Harry B., Dept. 597-0. Seniority date Feb. 22, 1960, retired Aug. 29.

FRINDT—Raymond J., Dept. 145-1. Seniority date Nov. 15, 1955, retired Sept. 12.

KUNTZE—Herbert O., Dept. 756. Seniority date July 11, 1956, retired Aug. 29.

LIZARRARAS—Albert W., Dept. 820-0. Seniority date March 2, 1959, retired Aug. 4.

NICODEMUS—James L., Dept. 452-0. Seniority date Aug. 11, 1958, retired Aug. 30.

OSBORNE—Harold M., Dept. 763-0. Seniority date July 6, 1954, retired July 7.

PIZZANELLI—Benjamin B., Dept. 979-1. Seniority date Feb. 24, 1959, retired July 16.

THURLBY—Albert J., Dept. 400-1. Seniority date May 9, 1960, retired July 31.

BAKER—Roberta F., Dept. 834-2. Seniority date July 9, 1956, retired Aug. 22.

BARTON—Fern F., Dept. 518. Seniority date Sept. 19, 1947, retired Sept. 19.

BILLINGS—Earl G., Dept. 565. Seniority date May 11, 1960, retired Aug. 25.

GILLAN—James E., Dept. 979. Seniority date May 4, 1959, retired Sept. 8.

STETZEL—Eva E., Dept. 840. Seniority date May 28, 1956, retired Sept. 19.

STROUD—Milton B., Dept. 985. Seniority date Feb. 6, 1951, retired July 1.

WILSON—Edna R., Dept. 101. Seniority date Sept. 17, 1941, retired April 2.

Rider-Driver

CONVAIR

CAR POOL—From College and University to Lindbergh Field plant. 7 a.m. to 3:30 p.m. shift. Call Marian Hirsch, 583-0732.

RIDE WANTED—From Serra Mesa area of Mission Village to Lindbergh Field plant. 7 a.m. to 3:30 p.m. shift. Call Nettie Szafraniec, 277-4226.

RIDE WANTED—From Spring Valley, Campo Road, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call A. Macias, ext. 1686 LF or (home) 465-0742.

RIDE WANTED—From Frontier Town, Harbison Canyon, to Lindbergh Field plant, 3:30 p.m. to midnight shift. Phone Earle Pooler, ext. 454 LF.

RIDE WANTED—Daily from Santa Ana, Huntington Beach area to Lindbergh Field plant. Day Shift. Call John Pilon, ext. 656.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Mfg. in Space Study Extended

(Continued from Page 1)

Up to now, he said, space programs and activities have revolved around space exploration and earth oriented services, such as communications or surveillance. These have a limited growth potential.

But with space manufacturing, the end-item is not a service or experiment, but a product with the final objective being commercial operations. This represents a built-in growth potential.

The operations will need supplies, cheap transport to and from orbit, tools, and countless other items. None of the support items can be planned until the most promising processes and their requirements have been identified.

The contract, Dr. Steurer said, should provide the answer for at least the initial in-space manufacturing experiments.

Space manufacturing comprises all potential in-space production including related in-space research. Up to now space manufacturing research has concerned itself primarily with engineering materials but it is rapidly expanding into the fields of chemistry and bio-chemistry.

Processing and manufacturing concepts are primarily based on such phenomena as the action of intermolecular forces, zero buoyancy and the absence of convection.

Under the contract, Convair will investigate the effect of weightlessness upon matter and materials in the fluid state and during solidification because it is the effect of weightlessness upon fluids that is the key to in-space manufacturing.

Included will be the effects of zero-g on the internal characteristics of liquids, characteristics of gases, surface characteristics of liquids, interaction of intrinsic forces of liquids, liquid/solid and liquid/liquid contact, the stability of mixtures, and the potential control of crystalization.

After these and other basic studies, a research and development plan will be established for the verification of process criteria and for the optimization of processes and products.

Technical information and program recommendations will be presented to MSFC in a formal report.

Convair has pursued the concept of space manufacturing for the past two years through fundamental and technological studies. Various techniques have been investigated for ground and aerial zero-g experiments and a laboratory zero-g facility has been built to support the study.

New Equipment Guide Published

Convair's industrial engineering department has published a pocket-size material handling equipment guide in loose-leaf form to assist personnel in ordering material handling and storage equipment.

Each type is pictured, its uses are described, and it is identified by an order number. When the same type of equipment is available in different configurations or sizes, each variation is assigned a "dash number" to be used following the order number.

For example, since horizontal finger racks on dollies are available in 8, 16, 24, and 32-foot lengths, the basic order number is 1-101 and the different lengths are designated with -1, -2, -3, and -4 suffixes. The same racks without dollies have a different order number.

Some pages in the guide contain brief supplemental notes. For example, pages on DC-10 skin-handling trailers have a note indicating tarpaulin transportation covers are available if needed.

The guide has been published to eliminate material handling and related communication problems found by Convair's material handling surveillance committee since its establishment in April.

The committee has found both users and suppliers have difficulty in describing material handling and storage equipment, especially since several new devices for use in the DC-10 program can be used in different configurations and lengths.

John Speed, general foreman of the transportation section of plant engineering, is assisting with coordination and implementation of the new ordering procedures.



STYLISH — Joyce Purczynski, Dept. 840-3 clerk, shows off new pocket-size Convair material handling equipment guide. It's in loose-leaf notebook form.

"Now there should be no question about what is available and what should be ordered," he said. "Each individual placing an order can see what he needs in the guide booklet and can order it by number."

Much of the material handling equipment has been designed and fabricated by the plant engineering department under the direction of W. J. Stanley.

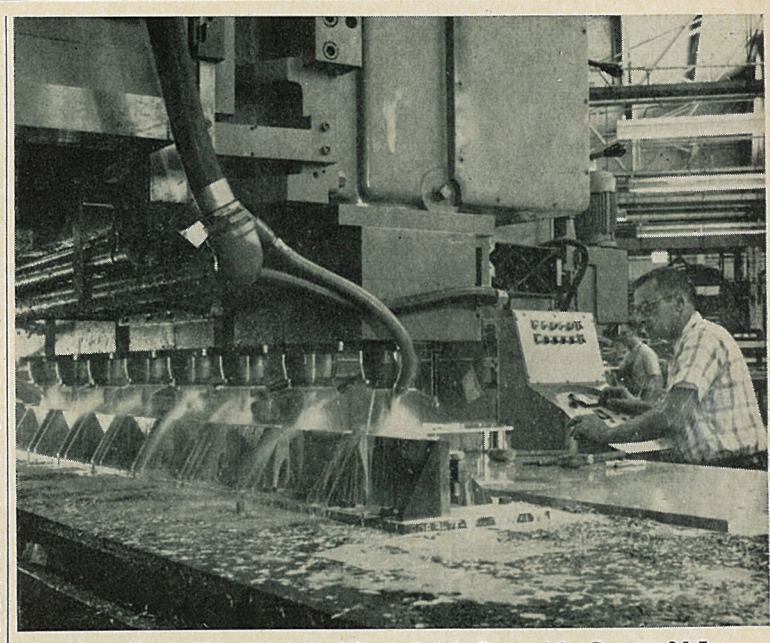
Forrest Sterling, of industrial engineering projects (Dept. 202-2), is developing the guide.

Initial distribution will include two of four planned sections — one on general purpose mobile equipment and one on general purpose stationary equipment.

Sections will be added later on special purpose mobile and special purpose stationary equipment.

The material handling and packaging section of industrial engineering projects will handle distribution. New sections and revised pages will be sent to personnel on the distribution list as they are published.

"We looked at many different types of material handling and storage equipment guides then produced one that will be easy to carry, easy to use, and easy to change as needed," Sterling said.



MULTIPLE DUTY—Melvin Ishmael of Convair's Dept. 015 uses three-axis profiler for simultaneous milling of eight DC-10 cargo door brackets. Movement of cutting heads is directed from a template.

Demonstration of Firefighting Planned at LF Compass Rose

Convair firemen will present a firefighting demonstration at 1 p.m. Monday (Oct. 6) as one of the highlights of San Diego's week-long observance of national Fire Prevention Week.

Del Dimmitt, division fire chief, said the demonstration will be in the Compass Rose area northwest of the Lindbergh Field plant and will be witnessed by San Diego County government, civic, and business leaders.

The demonstration, utilizing techniques employed by Convair firemen in extinguishing aircraft-crash fires at San Diego International Airport, will follow a Fire Prevention Week parade along Broadway in San Diego.

Supervisors wishing to arrange for employe indoctrination in proper use of fire extinguishers may schedule demonstrations during the week by phoning Dimmitt, ext. 511 LF.

Dimmitt said Fire Prevention Week will have added significance for Convair and other General Dynamics facilities in the San Diego area this year since it coincides with an inspection by representatives from insurance underwriting firms and Joseph Morley, fire protection specialist from Corporate Headquarters.

"Every building at each location will be inspected," Dimmitt said. "Special attention will be paid to housekeeping practices, storage areas, special fire-protection areas, control of flammable liquids, smoking regulations, sprinkler systems, and fire protection equipment."

Medical Coverage Cost Reduced for Salaried Personnel

The salaried personnel contribution toward dependent medical coverage has been reduced by $1.34 per pay period, effective Monday, Sept. 29.

The reduction amounts to an annual increase in take home pay of $34.84 for those employes carrying dependent medical insurance. The first pay checks reflecting this will be distributed Oct. 17.

General Manager Jack L. Bowers said: "The Convair division Group Medical Plan is among the very best in the aerospace industry. The recently announced improvements in the plan, combined with this reduction in premium, make it even better."

This is the third 25 per cent reduction in salaried employes contribution toward dependent medical coverage since September 1967.

The contribution at that time was $5.36 per pay period. This was reduced in 1967 by 25 per cent ($1.34) to $4.02 and in 1968 by another 25 per cent ($1.34) to $2.68. Salaried employes will now pay $1.34 per pay period.

ATLAS-F BOOSTER LAUNCHES ABRES VEHICLE

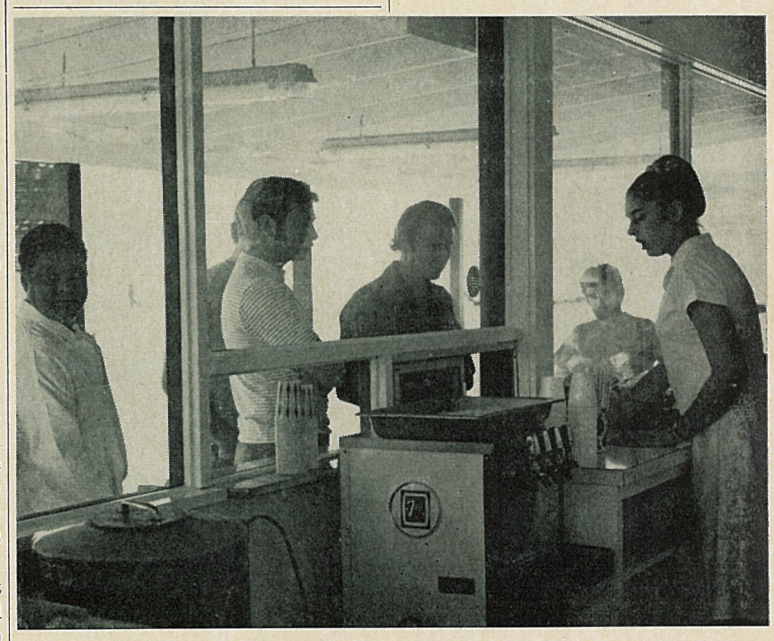
An Atlas F booster successfully launched an experimental re-entry vehicle Sept. 16 in the Advanced Ballistic Re-entry Systems (ABRES) program at Vandenberg AFB.

Hot-Lunch Canteen Opens at Plant 19

A new canteen for Convair employes at U. S. Air Force Plant 19 has been opened on the east side of Bldg. 28.

The canteen, operated by the Prophet Co., is open 6 to 6:45 a.m., 11 to 11:30 a.m., 7:30 to 8 p.m., and 8:30 to 9 p.m.

It is equipped with a grill for preparation of hamburgers, cheeseburgers, hot dogs, chili-dogs, barbecue beef and other hot sandwiches. Steaks and hot lunches, prepared at the Lindbergh Field cafeteria also will be available, as will salads, pie, ice cream, sundaes, and malts.



OPENING—Hot foods are being served at new canteen on east side of Bldg. 28 at AF Plant 19 during first and second-shift lunch hours.

Precision Flying Marks Air Guard F-102 Group

The "Bushy Badgers" of Wisconsin Air National Guard's 115th Fighter Group at Traux Field in Madison fly Convair-built F-102 Delta Daggers in precision formations rivaling those of Air Force and Navy specialty flying teams.

The 115th received an overall outstanding rating last spring in Aerospace Defense Command tactical evaluations. The group further sharpened its flying and aircraft support skills this summer during two weeks of active duty training at Gulfport, Miss.

Personnel in the 115th include Wisconsin farmers, lawyers, business executives, college students, airline pilots, and men from many other vocational fields.

The group converted to F-102s from F-89Js in 1966 and was declared "combat ready" in minimal time.

B. F. Ferguson, Convair F-102/F-106 deputy program manager, said pride of the group in its achievements is "reflected in the way they fly the F-102s in support of air defense."



PRECISION PILOTING—Convair-built F-102 interceptors are flown by Wisconsin Air National Guard 115th Fighter Group in precision formation during summer training exercises.

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

BILL J. McNUTT (1956) from Convair division to Stromberg DatagraphiX as senior facilities engineer; **DONALD L. INGRAM** (1961) from Convair to senior product specialist, DatagraphiX; **NORMAN GIBSON** (1946) from Stromberg-Carlson to Electronics, Rochester; **WILLIAM M. ADDINGTON JR.** (1955) from Convair to Fort Worth (Edwards Air Force Base): **JOHN A. CADY** (1950) from Convair to industrial engineer, DatagraphiX; **LEROY E. WATSON** (1956) from Convair to Fort Worth; **DONALD R. STEWART** (1955) from Convair to Electronics, Rochester; **ERNEST F. SMITH** (1959) from Convair to senior engineer, Electronics-SD; **PAUL W. WIEDENMANN** (1964) from Corporate Headquarters to DatagraphiX as manager of financial planning; **GEORGE A. KAONIS** (1965) from Convair to electronic engineer, DatagraphiX; **OTIS D. ROBERTSON** (1952) from Electronics-SD to Convair as program analyst; **GAIL R. BARKLEY** (1960) from Convair to design engineer, Pomona; **FRANK M. PETERMAN** (1948) from Convair to Fort Worth; **GERALD J. BLUMENTHAL** (1958) from Convair to engineering illustrator, Electronics-SD; **RENNIE J. HARRISON** (1969) from Convair to Fort Worth; **LEONARD J. GABER** (1954) from Convair to Electronics-SD; **GARY L. PHELPS** (1967) from Convair to Corporate Headquarters; **WAYNE D. BAKER,** from Pomona to DatagraphiX as senior systems analyst; **THOMAS S. WIED** (1961) from Convair to Corporate Headquarters.

Redeye Downs Drones in Colorado Demonstration For Army Units

Redeye, the world's smallest guided missile system, was demonstrated in a recent introductory show of weapons at Ft. Carson, Colo.

Purpose of the demonstration, according to Lt. Col. Avon R. Omps, 5th Division Air Defense Staff officer and commander of the 4th Battalion, 61st Air Defense Artillery, was to introduce the Redeye and Vulcan to 5th Division and appraise military personnel of the system's capabilities.

The two new systems, Lt. Col. Omps said, give the Army its most lethal and efficient means of defense against low-altitude aircraft and are easily transported and maintained.

Lt. Col. Omp's unit recently moved to Ft. Carson from Ft. Bliss, Tex.

First to be demonstrated was the Redeye, introduced by Lt. James N. Mayfield, project officer for the weapon. Three teams fired at drone aircraft, bringing them down with the infrared guided missiles.

Maj. Luke E. Clark, operations and training officer for 4th Battalion, 61st Artillery, then introduced the Vulcan and its air defense capabilities to the spectators.

The Vulcan low-altitude antiaircraft weapon consists of a modified M113 armored personnel carrier with a Gatling gun-principle cannon as its main armament.

Delegations Will Represent GD At Birmingham Convention

Seventeen representatives of Management Clubs at General Dynamics' Pomona, Convair, and Fort Worth divisions will attend the National Management Association's annual convention Oct. 21-23 in Birmingham, Ala.

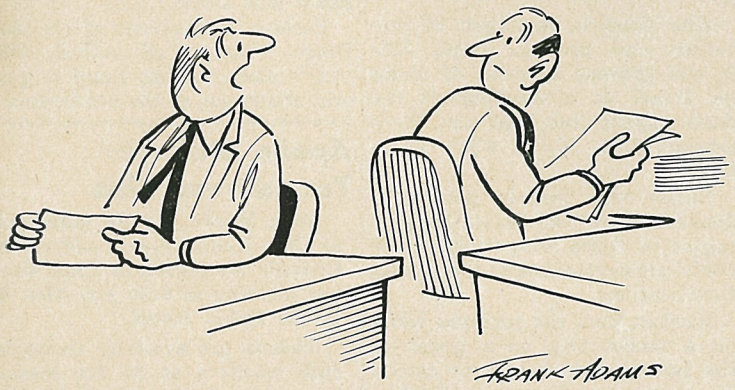
Attendees, by division, are:

Pomona — F. D. Calkins, president; L. E. Dorsey, vice president.

Convair — Jess E. Cook, president; H. B. Day, first vice president; C. B. Simmons, second vice president; G. W. Cowan, recording secretary; A. E. Devine, financial secretary; J. A. Dematteis, treasurer; W. F. Chana, past president; W. E. Magnuson, NMA director.

Fort Worth — C. J. Middleton, president; Jim Vaughan, board chairman; Farris Callan, NMA director, and (four officers selected in a drawing) Bob McClean, Fiske Hanley, Jim Pratt, and Roy Mack.

Theme of the annual meeting will be "Things to Come." Annual awards for outstanding clubs will be presented.



"I got a raise but I've still got too much month left over at the end of my money."

Female of the Species Gets a 'Heart Break'

(Following is the first in a series of health articles, prepared by physicians at different General Dynamics divisions/subsidiaries. They will appear from time to time under Corporate Headquarters sponsorship.)

BY DR. LAWRENCE MARINELLI*
Medical director, Pomona division

Each year more than 500,000 persons die of heart attacks, many in their most productive years.

Nearly every adult has some degree of degenerative changes of the inner lining of arterial



WEIGHT WATCHING

blood vessels and thus preventive measures should be initiated early in life in order to have the best chance of preventing or retarding these changes.

The incidence of coronary disease shows a sharp rise with increasing age, which is probably a reflection of the fact that it takes a long time for arterial blood vessel changes to develop. Men 45 to 62 years of age have twice the risk of developing this disease than women of comparable age, but the prevention of coronary heart disease should be of concern to every member of the family. The health, diet and exercise habits learned in childhood often form the living patterns that may protect hearts in adult life.

Hereditary factors most likely play a significant role in coronary heart disease. Thus, if this disease is a family characteristic, individual members should be considered highly susceptible and should follow programs designed to correct the unfavorable risk factor. Individuals with diabetes or gout are twice as susceptible to developing coronary disease and should thus be under good medical management. Race has probably no important influence on this disease, and the differences noted among various races are almost certainly due to economic and nutritional factors.

Obesity or body weight in excess of 30 per cent of desirable weight standards listed in life insurance tables will increase the risk of a heart attack two-fold in middle-aged men. Life expectancy is also shorter for people who are markedly over their normal weight as they are more susceptible to high blood pressure, diabetes, and other related diseases. Control of obesity should not only include the reduction of food intake, but also participation in regular physical exercise. A recommended diet would include the restriction of animal fats and simple sugars as well as increasing the proportion of polyunsaturated vegetable fats to saturated animal fats.

Research has consistently shown an increase in coronary heart disease as the concentration of cholesterol (a fatty substance in the blood) increases. Saturated fats which are found in such foods as meats, dairy products, egg yolks, etc. are high in cholesterol and should thus be replaced in the diet by polyunsaturated fats such as vegetable oils, margarine, etc. which tend to lower the level of blood cholesterol. There is no clear-cut evidence that an induced reduction in blood cholesterol decreases the likelihood of coronary disease, but until further medical research reveals the exact relationship of blood cholesterol to this disease, it is safer to reduce saturated fats in the diet.

Blood pressure is the pressure put on the walls of the arteries as the heart pumps blood through



BAN THE SMOKES

them. Studies have shown that coronary heart disease is three to five times more common in individuals who have undetected and untreated hypertension or high blood pressure over a long period of time. When high blood pressure is combined with other conditions such as obesity, diabetes, or high blood cholesterol levels, the risk of heart attack is substantially increased. Through regular medical checkups and proper medical treatment, hypertension can be brought under control in most cases, thus reducing this risk factor.

One study of middle-aged men revealed the risk of a heart attack to be three to five times greater for those men smoking 20 or more cigarettes daily than for the non-smoker. Cigar and pipe smoking have not been proven to be associated with any substantial increase in risk of coronary disease, however they are associated with an increased risk of mouth and throat cancer. There is encouraging evidence that those who give up cigarette smoking can reduce their risk factor to coronary disease to that of the non-smokers, as well as reducing their risk to lung cancer.

There is increasing medical evidence to show that men who are physically inactive have a higher risk of heart attack than those who get regular moderate exercise. Exercise tones the muscles, stimulates the circulation, and helps to avoid overweight, but



REGULAR EXERCISE

unusually strenuous exertion after a large meal, when experiencing emotional stress, or in extremely cold or hot weather should be avoided. Physical activity should be increased gradually, and the family physician is the best consultant to determine how much and in what type of exercise an individual should participate in accordance with the age and physical condition of the individual.

The appearance of new electrocardiographic abnormalities may indicate the development of early asymptomatic coronary disease. The simultaneous presence of a number of the above risk factors in one individual may increase the risk of coronary heart disease ten-fold. Since many of these risk factors such as obesity, high blood cholesterol, hypertension, cigarette smoking, and physical inactivity can be modified or eliminated altogether, regular medical checkups are recommended to detect and correct these conditions. While there is no guarantee that the reduction of these risk factors will prevent heart attacks, they can result in good general health and physical fitness for every employe as well as every family member.

*Dr. Marinelli, recently elected medical vice chairman of the East San Gabriel Valley Branch, Los Angeles County Heart Association, received his AB degree from New York University, 1952, his MD from Georgetown University, 1956, and MPH, 1966, from Columbia School of Public Health and Administrative Medicine. A commander in the U.S. Naval Reserve, he has had extensive Navy duty and served as a regional flight surgeon for FAA, 1962-1968, before joining Pomona division.

Pieces of Gold

Coin Collector Concentrates On Old, Rare Japanese Money

Most people value money solely by the goods and services it will purchase, but Convair's Al Baber harbors an interest in coinage extending beyond its face value.

Aside from making, spending and saving (?) money as most are content to do, Baber, an estimator in Dept. 195-8, collects and studies world "coins of the realm."

A coin collector since the early 1950s, Baber's specialty is Japanese silver and copper money. Begun in 1959, his collection now stands among the most complete and has been favorably noted in several numismatic journals.

Baber's Japanese coins are arranged in date sets (each type coin minted during a year). Numbering more than 800 coins, his collection lacks a mere 16 pieces from being a complete 1870-present date set.

He began his collection when he discovered that quantities of Oriental coins were readily available on the U. S. West Coast. This was due, says Baber, to a large outflow of coins and currency from Japan before, during and after WWII, much of it in the pockets of immigrants.

Although he lacks a few coins in his date set collection, he will probably never complete it. Of the 16 remaining coins, most are so rare that he holds little hope of obtaining them. One coin, for instance, dated 1880, had only 79 struck and but six of these are known to exist.

One unique fact garnered from his study of Japanese coins is that "The Japanese, unlike nearly every other nation, have never depicted man on a coin." Man is held too sacred, for example, to have his image passed from hand to hand in common street transactions.



ASSAY DUTIES — Convair's Al Baber, Dept. 195-8 estimator, inspects silver quality and quantity in coins as member of U.S. Assay Commission at Philadelphia (GD/NEWS Feb. 19, 1969) while Eva Adams, then director of U.S. Mint, looks on.

Baber's latest numismatic endeavor is a collection of ancient coins of Japanese provinces. This collection begins in 618 AD, the first year Japan minted coins, and continues to 1869 when the Japanese emperor centralized the government and monetary system. This collection is, understandably, limited thus far.

Among his rarest coins are a pair of Japanese gold pieces. One, an Eiraku Tsuho issued in 1593, is one of only two he has ever seen and numbers among the few in existence. In perfect condition, this coin was originally a presentation piece and was never circulated. The second is a provincial "Ichi-Bu-Kin" or one-bu(unit) gold piece from Koshu Province. This coin is not dated, however they were minted from 1600-1860. Koshu is noted for some of the world's purest gold.

Baber, a veteran of more than 26 years at Convair, is prominent in both local and national numismatic circles. He is currently president of the California Numismatic Society.

Gymnastics Course Begins for Women

An eight-week Swedish-dance "gymnastics for physical fitness" course for women is being offered at reduced rates to General Dynamics employes and family members by the San Diego Industrial Recreation Council.

Held each Thursday at 7 p.m. in the La Sala room at the House of Hospitality in Balboa Park, the course will cost $14 (a $21 saving).

Instruction will be directed by Irene Webb, a graduate of Lillsved's Gymnastikfolkhogskola (gymnastic college) in Sweden.

A free introductory session will be conducted tomorrow (Oct. 2). Call 224-3097 for information.

McMenamy to Serve On Civic Committee

Convair's C. F. McMenamy, Dept. 520-1 group engineer, has been nominated by San Diego Mayor Frank Curran to serve on the community's Committee for United Nations Week. The nationwide UN commemoration is set for Oct. 19-25.

McMenamy, a Convair engineer since 1945, is presently serving as a "loan executive" to San Diego's 1969 United Crusade.

Gift Shop Opened In Frontier Town

CRA Rockhound Club recently opened a gift shop in Frontier Town at Missile Park. It is open Monday, Tuesday and Thursday, 7-9 p.m.

The Rockhounds' regular meeting will be Oct. 8 at 6:30 p.m. in CRA Picnic Shelter. A potluck dinner and a slide presentation are included in the program.

Finn 'Fun Packages' On Sale at Saving

Mickie Finn "fun nite packages" are on sale at employe benefits offices.

The packages sell for $10 and include two permanent membership cards, one straw hat ticket, one ticket for a stereo record album, and four drink tickets. Regular value is $15.

YAGER APPOINTED TO SOCIETY OFFICE

E. K. Yager, Dept. 507-0, has been named an associate director of the Aerospace Division of the Instrument Society of America. Yager, supervisor of instrumentation at Aeromarine Test Facility, has been with Convair since 1955.

Six Have Roles In SAE Meeting

Six Convair men have key roles in the 1969 National Aeronautic and Space Engineering and Manufacturing Meeting of the Society of Automotive Engineers next week (Oct. 6-10) in Los Angeles.

R. E. Bechtol will discuss "Forecasting production facilities requirements — the right machine at the right time" on a facilities acquisition, layout, and control panel.

C. E. Roye will be chairman of a panel, planned by Convair's G. A. Grossaint, on "Substitutes for forging." G. J. Langford is panel secretary.

A. H. Cooper will speak on "The survivability of military V/STOL transport aircraft" during a panel on survivability and vulnerability design considerations for military aircraft subsystems.

W. W. Withee is a member of the planning committee for the meeting, which is being hosted jointly by the society's Southern California and San Diego sections.

COLLEGE COURSES ATTENDED BY 600

Six hundred Convair employes are enrolled in fall in-plant San Diego Evening College, University of California Extension, and United States International University courses.

More than 400 are attending 16 Evening College courses at the Lindbergh Field and Kearny Mesa plants.

"This is more than double the enrollment we had during the spring semester," Hal Rubin, Evening College coordinator for educational services Dept. 130-3, said. "Some classes were oversubscribed several days before start of the semester."

Openings are still available in five fall-quarter UC Extension courses that begin this week.

Building Planned For DC-10 Assembly

A new $10 million building for final assembly of the McDonnell Douglas DC-10 is under construction at Douglas' Long Beach plant.

The 392,000-square-foot hangar-style building, scheduled for completion in mid-1970, will house six of the tri-jetliners for final assembly, functional checks, and customer inspections.

DC-10s will be 180 feet long with a wingspan of 155 feet.

Fuselage sections for the DC-10s, produced by Convair, will be joined and wings will be added in existing Douglas facilities. Each plane then will be towed to the new building where the vertical stabilizer will be added, engines installed, and interior fittings finished.

The final assembly building will be 510 feet long and 480 feet wide. Roof height will be 94 feet, with maximum interior height of 70 feet above the floor.

CRA Bicycle Club Plans Two Rides

CRA Bicycle Club will take a 12½ mile ride Sunday, Oct. 5, with a 25 mile ride Saturday, Oct. 11.

The Oct. 5 ride will be from Islandia Hotel to Old Town under the direction of Alan Conolly, beginning at 2 p.m.

Oct. 11 riders will meet at 9 a.m. at the Kearny Mesa plant parking lot and, under the direction of Dave Lukens, will go to Scripps Ranch. For information call Lukens, ext. 2881 KM.

TOASTMASTERS SET OCT. 2 MEETING

Convair's Dynamic Toastmasters No. 457 have slated their next meeting for tomorrow (Oct. 2) at 5:30 p.m. in the CRA Clubhouse. Four speakers are scheduled.



VALUABLE IDEA—J. D. Rhamy, center, Dept. 543-1 and J. C. Herman, right, Dept. 543-1, display certificates of commendation presented to them by Orison Wade, Dept. 550-0, chief design engineer, electronic systems, for their Cost Reduction Proposal. Each man was credited with a saving of $57,850 for proposing change of test method which eliminated considerable modification of an F-111 AGERD.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearnw Mesa. Deadline for next issue of GD/NEWS is Oct. 7. Call ext. 1111 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

ADVENTURERS—Meeting Oct. 15, 7:30 p.m.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Oct. 5, 12-mile Islandia to Old Town ride at 2 p.m. Oct. 11, 25-mile Scripps Ranch ride at 9 a.m.

BONAIR FLYERS—Meeting Oct. 2, 7:30 p.m.

BRIDGE—Duplicate bridge session each Friday, 7:30 p.m.

CERAMICS—Meet Tuesdays and Thursdays, 9 a.m.-noon & 7-10 p.m.

CHORUS—Rehearsals Wednesdays, 7:30 p.m.

COINEERS—"Coins of the world" theme at Oct. 13, 8 p.m. meeting.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS—Meeting Oct. 8, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m. YWCA, 10th & C Sts.

GARDEN CLUB—Meet tonight (Oct. 1), 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Rancho Barnardo tournament, Oct. 11-12.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m., Saturdays: "Women Only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting Oct. 7, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Club shoots Oct. 12, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Oct. 2, 7:30 p.m. On-the-air-network every Wednesday, 7:30 p.m.

RIDING CLUB—Meeting Oct. 8, 7:30 p.m.

RIFLE CLUB—Senior shoot Oct. 8, 7 p.m., junior shoot Oct. 5, 9 a.m., Gillespie Field Range.

ROCKHOUNDS—Potluck dinner, 6:30 p.m., meeting 7:30 p.m., Oct. 8, CRA Missile Park picnic shelter. Rockhound Frontier Land shop at CRA Missile park open Wednesdays 11 a.m.-1 p.m. and Mondays, Tuesdays, and Thursdays, 7-9 p.m. Gillespie Field Shop open Thursdays, 7-9 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting Oct. 7, 8 p.m., South Bay Club.

SPECIAL EVENTS—Program of Swedish Dance exercises to be offered to women starting October 2nd. House of Hospitality, Balboa Park.

SPORTS CAR CLUB—Meeting Oct. 8, 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE—Dance Thursdays, 8-10 p.m. Beginner class starts Oct. 7, 8-10 p.m.

STAMP CLUB—Meeting Oct. 9, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TENNIS—Fall tournament starts Oct. 11.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, meet Thursdays, 5:30 p.m.

TOASTMISTRESS—Meet Oct. 7, 7 p.m.

TOURS—Las Vegas trip being planned for November.

TRAILERS—Meeting Oct. 7, 7:30 p.m.

WOMENS GOLF—Coronado Municipal tournament, Oct. 11 at 8:30 a.m.

Convair Shares In NASA Award

Convair has received the NASA Group Achievement Award "in recognition of outstanding efforts and accomplishments in carrying out the complex tasks which led to the success of OAO-II, the world's first successful astronomical observatory in space."

The award was given to all parties involved, both contractor and government agencies.

In sending the award to Convair General Manager Jack L. Bowers, William R. Dunbar, NASA manager, Centaur Project, also congratulated Convair for the "unblemished performance" and the successful launch of AC-18 which placed ATS-E into orbit.

Exhibit Scheduled For AIAA Meeting

The American Institute of Aeronautics and Astronautics will hold its annual meeting and technical display in Anaheim, Oct. 20-24.

General Dynamics will have a Corporate exhibit at the meeting. Among Convair personnel attending will be Bruce McKay, Dept. 115-0, F. J. Dore, Dept. 580-0, and R. A. Nau, Dept. 581-5. All three will participate in panel and technical discussions.

Hurlich Will Show Pictures of Israel

Abe Hurlich, manager of materials and process, Dept. 572-0, will present a series of slides on Israel at a meeting of the Adventurers Club, 7:30 p.m. Wednesday, Oct. 15, at CRA Clubhouse.

Slides will include scenes of Jerusalem and the Golam Heights region of Syria with shots of the 1967 battlegrounds and the Syrian fortifications.

Hurlich took the pictures while on a recent trip as a guest of the Israeli government to attend the Jerusalem Economic Conference and tour Israel's metal working plants.

ASTME Will Change Name on Jan. 1, '70

The American Society of Tool and Manufacturing Engineers (ASTME) will change the name of the organization to Society of Manufacturing Engineers, effective Jan. 1, 1970.

According to C. E. Roye, Dept. 491-0, there are approximately 450 ASTME members in the San Diego area. Roye is ASTME Region Seven membership chairman.

Two from Convair Aid in Conference

The American Institute of Industrial Engineers' Western Regional Conference will be in San Diego, Oct. 23-24. Two Convair engineers, Charles Perdue, Dept. 565-0 and Harry Lund, Dept. 250-0 will assist.

Perdue is president of the San Diego chapter of AIEE, this year's host chapter, Lund is general chairman of the conference.

Apollo Manager To Address Club

John Moore, Apollo manager at Cape Kennedy, will address a Convair Management Club dinner meeting at 6:30 p.m. Oct. 8 in the Bahia Hotel.

Tickets are available through club boosters at $4 for members and wives and $5.25 for non-members and guests.

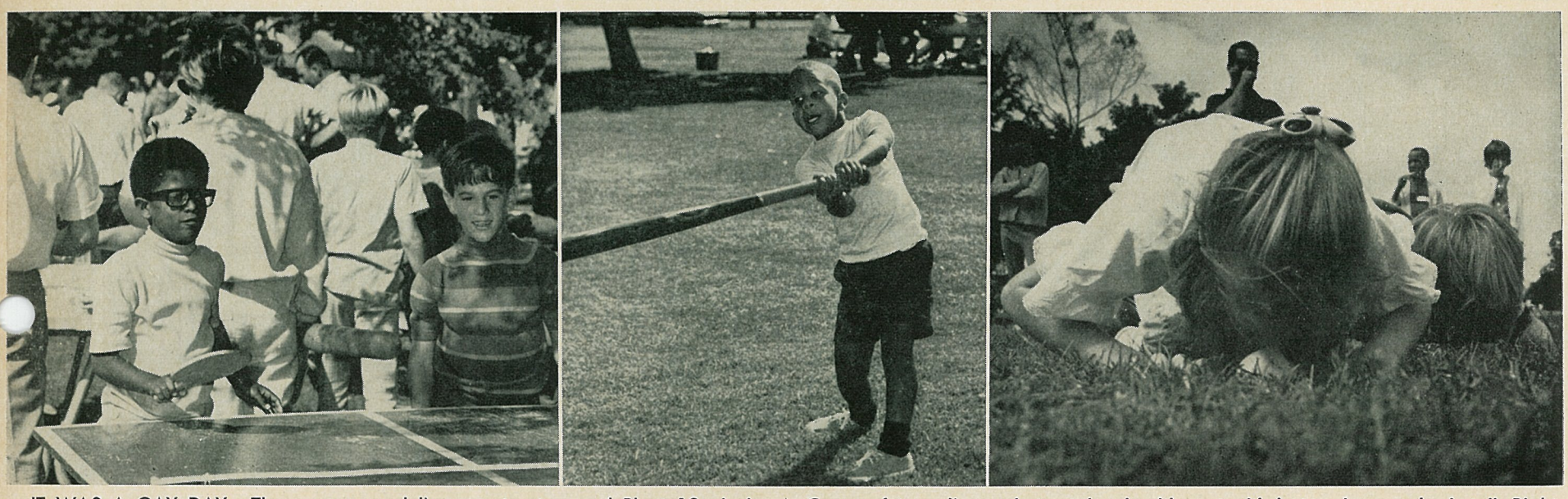
Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

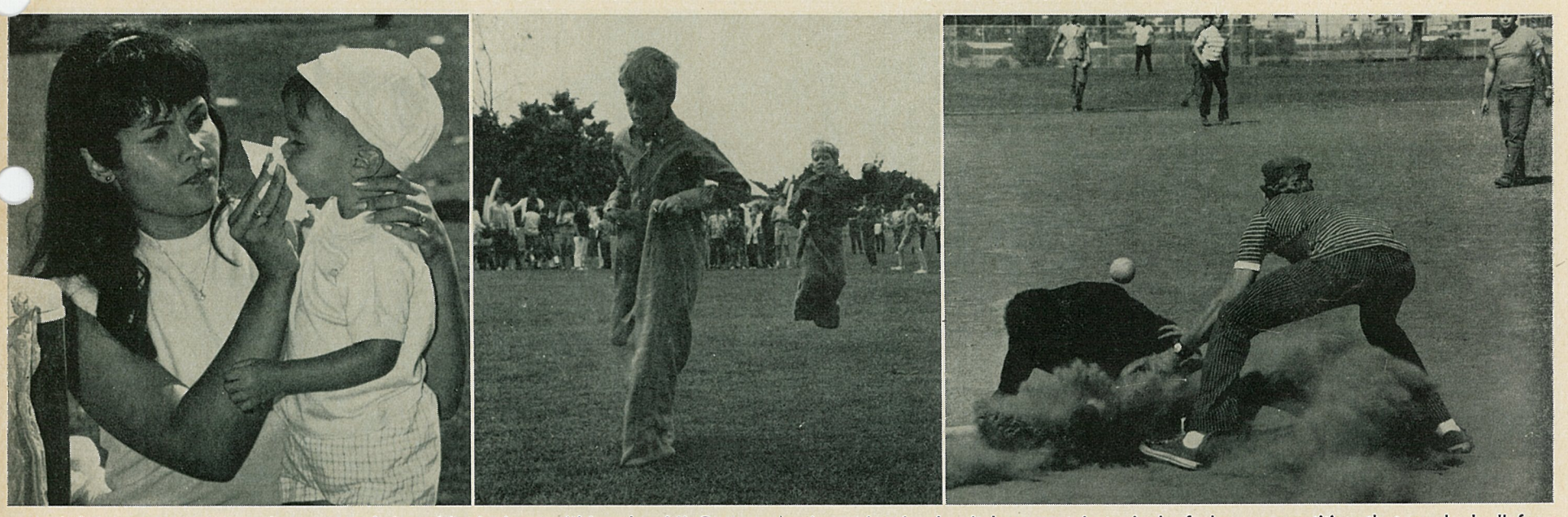
(Continued from Page 1)

Q—Why can't employes be given a one-time option of selecting an anniversary date for vacations? If an individual hires in at an awkward time during the year, with respect to school vacation etc., he is stuck.

A—Employes have one full year following the anniversary date to take vacations and Convair considers this is sufficient latitude. Every effort is made to grant vacations when requested.



IT WAS A GAY DAY—There were no dull moments at annual Plant 19 picnic, held at CRA Missile Park, as games, contests and barbecue kept adults and youngsters on the move. Above left: ping pong was among most popular diversions. Center: future diamond star takes healthy cut with bat as long as he is tall. Right: youngsters use "nose power" in potato race. Day was climaxed by a drawing in which S. T. Hyder, a newlywed, won a Hawaiian vacation.



At left, youngster pauses long enough in spirited play to "blow hard." Center: sack races brought many a tumble, but here are two who kept their footing. Right: close play in slo-pitch contest is typical of close competition that marked all four games.

CRA and Mgt. Club Plans New Tourney For Fall

CRA Tennis Club and Convair Management Club will co-sponsor a tennis tournament to be played during October and November at Morley Field and Mesa College.

The schedule is:

Advanced men's singles 9 a.m. Oct. 11-12, Mesa College; Intermediate men's singles 9 a.m. Oct. 25-26, Morley Field; novice men's singles 1 p.m. Oct. 11-12, Mesa College.

Advanced men's doubles, 9 a.m. Oct. 18-19, Mesa College; intermediate men's doubles, 9 a.m. Nov. 1-2, Morley Field; novice men's doubles, 1 p.m. Oct. 18-19, Mesa College.

Intermediate women's singles, 1 p.m. Oct. 25, Morley Field; novice women's singles, 1 p.m. Nov. 1, Morley Field.

Mixed doubles will be Nov. 8-9, time and place to be announced later. Entries are due Wednesday before scheduled date. Tournament chairman is Bob Herold, ext. 2360 KM.



BEST ACTRESS — Tyler Winn, Dept. 954-3, leadwoman, displays Atlas Award she received for being best actress of 1968-1969 season on Old Globe Cassius Carter Stage. She won award — local equivalent of the Oscar — for her role as Sister George in "The Killing of Sister George." She also won an Atlas for her previous role at Old Globe when she played Eunice in "A Streetcar Named Desire" 10 years ago.

Coineers Schedule 'Wooden Money' Talk

Wooden money will be discussed by Howard Musick at the CRA Coineers' meeting at 8 p.m. Oct. 13 in the CRA Clubhouse. "Coins of the world" will be theme for the month. Refreshments will be served and junior and adult auctions, a drawing, and door prizes are scheduled.

Members have been asked to begin bringing coins to donate to Scouts at a January meeting at which they will be honored. Call Steve Ames, ext. 659 LF or (home) 276-1442, for additional information.

Convair Daughter Takes Twirling Title

An 11-year-old Convair daughter recently pranced her way to her age group's California state strutting championship during a convention of the U. S. (baton) Twirling Association at San Jose.

Joanne Sylvia, daughter of Joe F. Sylvia, a customer service engineer at McClellan AFB, Sacramento, also recently was ranked seventh in the nation in her age group at the association's national convention in Houston, Tex.

She has been twirling for two-and-a-half years and holds more than 30 trophies.

Salvage Schedule

Next employes sales day at the Convair salvage yard, Lindbergh Field plant, will be Saturday, Oct. 11. Hours are from 8 a.m. until noon. Entrance is by badge. Children and pets are not allowed inside the yard. No canvas or open-toed shoes and no bare feet.

Sea World Night Tickets Available

Tickets are still available for the Friday (Oct. 3) Sea World night sponsored by Convair Management Club.

Cost is $1.50 for adults and 50 cents for children 16 and under. Proceeds from the event go to the club scholarship fund.

The aquatic park will be open for General Dynamics employes and their guests 7:30 p.m. to 1 a.m. All shows and attractions will be open and Sea World will put on a fireworks show.

Tickets may be obtained at Kearny Mesa from club boosters and at Lindbergh Field from Barbara Freeman at the vendor's office in the Bldg. 5 lobby or Vonda Fusco at employe benefits in Bldg. 16.

Mixed Golf League To Play Wednesdays

CRA mixed golf league will begin play Wednesdays at 6 p.m. starting Oct. 8 at River Valley links.

Each team must contain at least one member of the opposite sex with all play governed by USGA (modified) rules. Individual competition is also slated.

For information and registration in the ten-week series call Lynn Williams ext. 1408 LF.

Ilene Wilson Takes Two Golf Trophies

Distaff golfer Ilene Wilson came away with a pair of trophies in the monthly General Dynamics women's golf tournament Sept. 13 at Torrey Pines' north course.

While sweeping Flight A with 78 net strokes, she bagged a special putting trophy. Second place went to Kathy Mix with net 84.

In Flight B, Margaret Clark shot a two-under-par net 70 to outdistance second place Dorothy Johnson, who turned in a net 76 tally.

Next tournament is at Coronado Municipal links Oct. 11 with tee off at 8:30 a.m.

Attendance Tops 3,000 For Plant 19's Picnic

More than 3,000 were on hand Sept. 21 at CRA Missile Park for Air Force Plant 19's second annual employe family picnic.

Day long games and competition for children and adults and a barbecue dinner enhanced a Sunday afternoon which was capped by a drawing for trips to Hawaii and Las Vegas.

The Hawaiian vacation for two which included airline fare and hotel accommodations, was won by S. T. Hyder, Dept. 027. He's a newlywed and plans a second honeymoon this month.

Las Vegas will host Dept. 027's A. "Peewee" D'Ercole and his wife who walked away with tickets including travel, accommodations for three days and two nights plus $50 expense money.

Four rounds of softball were included in the day's activities. Sheet Metal Material won over Tooling in a 10-5 decision; John Munson's Production Control team drubbed Harry Rote's Dept. 027 in a 16-1 rematch victory to avenge a defeat in last year's games. Hourly and Supervision nines fought to a 5-5 tie and Machine Shop rapped Dept. 027 (II) 7-3.

Children's games included foot and sack races, a treasure hunt, potato rolls and other competition.

A dance for young people was climaxed by a drawing for radios and stereo record albums.

Door prize drawings were held throughout the picnic and more than 125 prizes, including 10 Charger football tickets and a television, were given away.

Ping pong and horseshoe competition continued all day and two hours of bingo netted some 36 prizes for employes and families.

250 Convair Golfers Expected For Championship Tournament

CRA Golf Club's annual plant championship tournament gets under way Oct. 11-12 at Rancho Bernardo.

More than 250 linksmen are expected to compete in 16 preliminary competition flights. Two winners from each flight will go into playoff rounds the following weekend to determine championship standings.

D. D. Dimmitt, golf commissioner, said the tournament champ will have his entry paid as Convair's representative in the 1970 Andy Williams San Diego Open.

The handicap winner will receive a new set of golf clubs and putters will be given for closest-to-pin shots on the par-3 holes.

Reservations for the tournament can be made today through Oct. 10 by phoning ext. 511, LF. Players will be assigned to flights, based on handicaps, in a drawing. Those who have not played in four CRA monthly tournaments will play in an open flight.

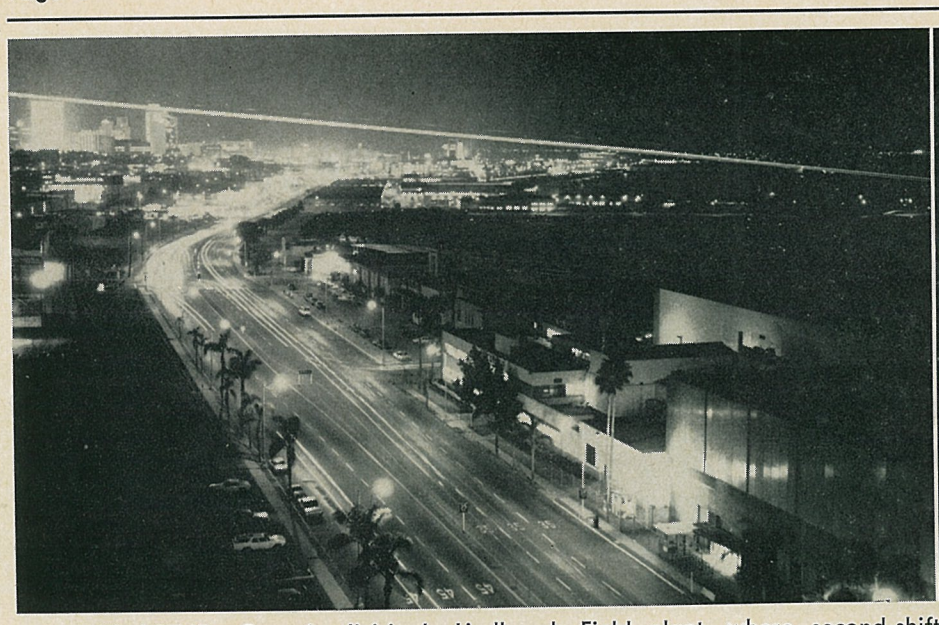
Be sure to use the ZIP code when addressing mail. It speeds up delivery!

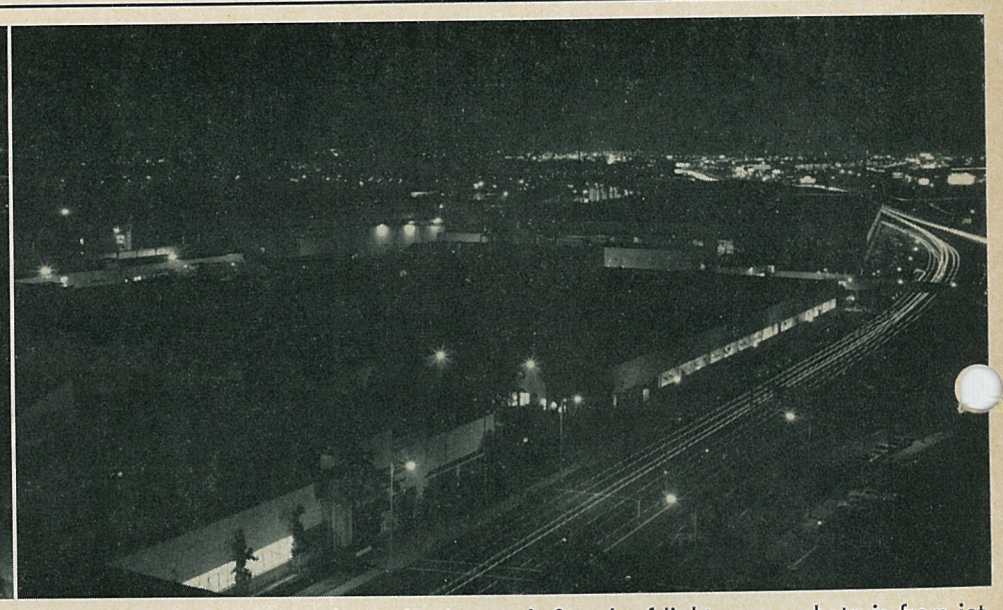
Susie McKee Shoots Like Annie Oakley!

CRA Pistol Club shooter Susie McKee, firing in her second competition match, swept the sharpshooter 22-cal. class Sept. 14 at police pistol range with a 252-3x score. Second place went to James Thomas with 215-1x.

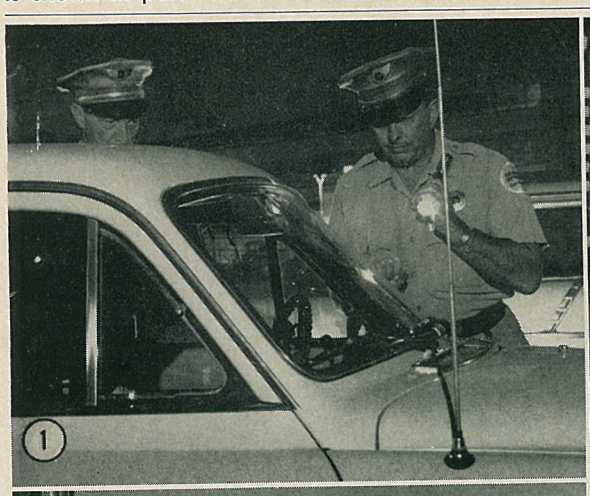
Other 22-cal. results were: masters — Roland Schneider, 293-8x; Don O'Brien, 293-7x; expert — Charles Kropp, 280-9x; Bill Worthington, 275-3x. Results of the 45-cal. match were Schneider, 263; Warren Walker, 237; Jim Halfacre, 232; Russ Frazier, 227.

Next match is Oct. 12 at 9:15 a.m. at the police range.

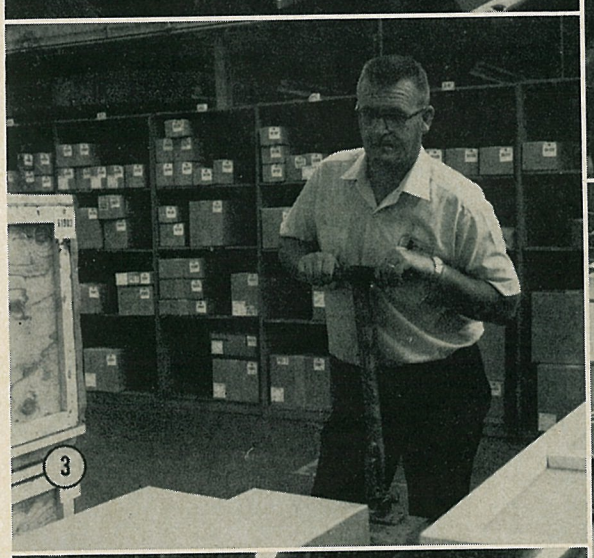


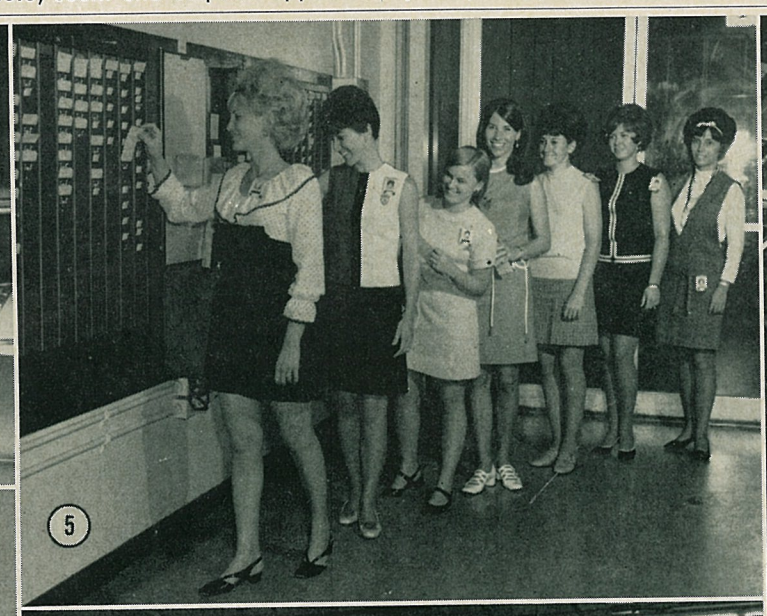


NIGHT SCENE—Convair division's Lindbergh Field plant, where second-shift employment has been expanding rapidly for DC-10 tri-jetliner fuselage fabrication, is shown in part in two different scenes. In left photo, south end of plant appears with city and harbor lights in background. Streak of light across photo is from jetliner landing at adjacent International Airport. Plant appears in foreground of right photo, snapped as photographer aimed northwest toward beach areas.





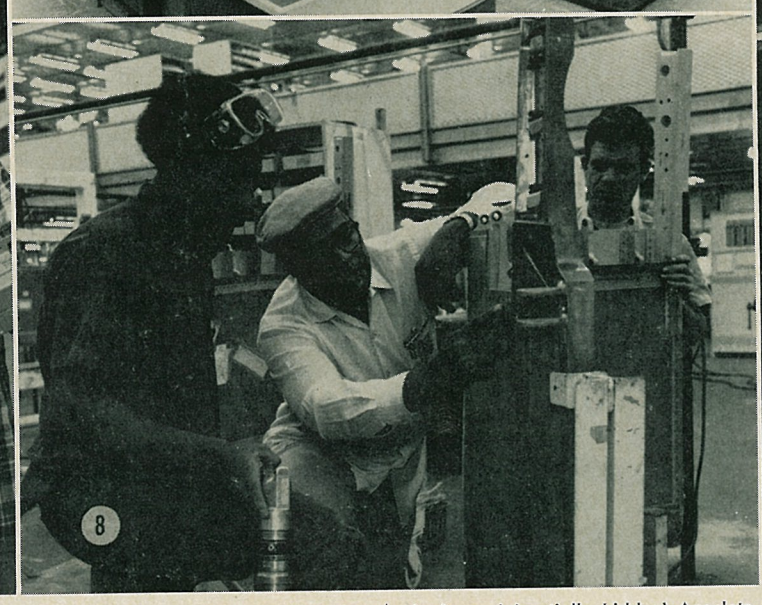


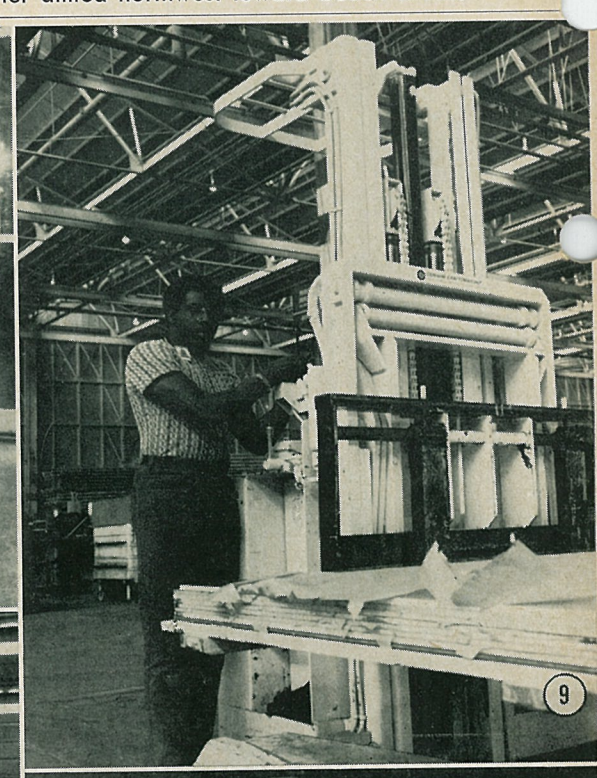




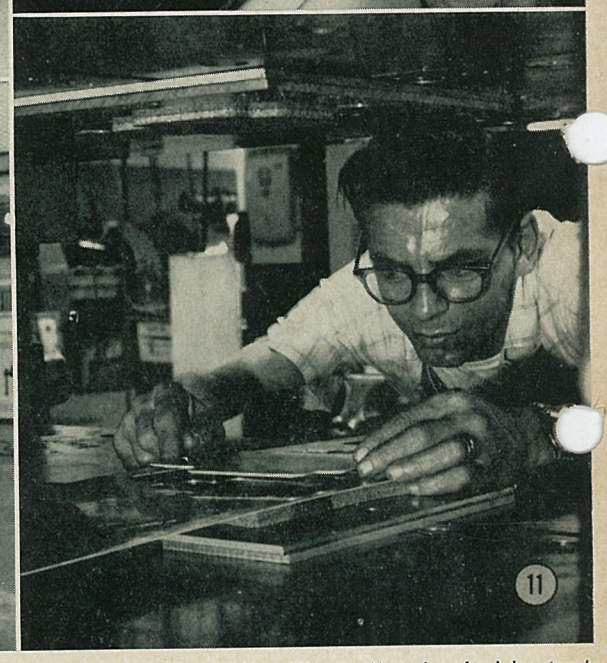












NIGHT PEOPLE—(1) Plant security guards Walt Hosman and Frank Thomas check parking lot at Lindbergh Field plant during night hours. (2) Mrs. Olga Fort, registered nurse at LF plant, gives emergency aid during second shift. (3) Fred Hadaway, Dept. 833-2 freight dispatcher, prepares priority night delivery. (4) Rachael Alo and David Workman, both Dept. 046 structural assemblers, work on DC-10 second shift. (5) Distaff employes reporting for second-shift in data processing at Kearny Mesa include, from left, Nalatia Fortney, Claudia Whaling, Paula Heckbert, Carol Schmidt, Cindy Dressler, Pam Snyodinos, and Judy Ashcraft. (6) F-111 assembly operations constitute major part of night work at AF Plant 19; from left: Al Baker, Rizal Majomut, Joe Mesa, Jim Powers, Virgil Lavis, and (partially hidden) Anacleto Rodriguez. (7) Second-shift at Kearny Mesa has feminine touch as keypunch operators keep machines humming. (8) William Hall, Dept. 027 trainee assembler at Plant 19, gets instruction from leadman I. Jordan; B. J. Fields is at right. (9) Joe Anderson, Dept. 836-1, prepares raw stores delivery for other second-shift departments. (10) Lois Nemshack, blueprint operator, removes completed print during second-shift in Dept. 518-0 graphic reproduction. (11) Robert Darling, Dept. 001 punch-press operator is among LF Bldg. 1 second-shift men in sheet metal and machine shop. Many Convair employes prefer night shift hours to working days and specifically request second shift.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22 No. 20 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 15, 1969

Bravo Returns, Alpha Takes up Ocean Station

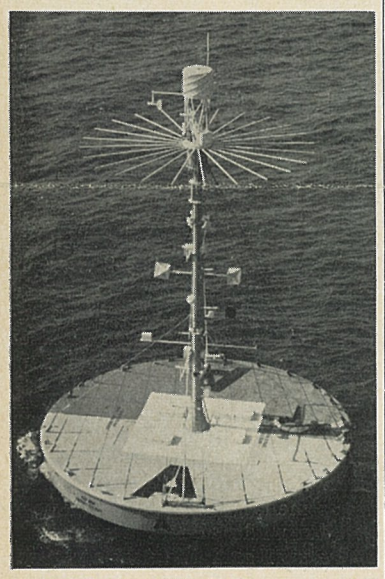
Ocean data station Bravo, developed by Convair for the Office of Naval Research (ONR), is back "home" at Lindbergh Field after nearly a year of gathering and radioing scientific data from the North Pacific.

Bravo was towed back by the U.S. Coast Guard cutter Acushnet for evaluation and systems updating after operating since Aug. 11, 1968, about halfway between Honolulu, Hawaii, and Kodiak, Alaska—some 2,200 miles from San Diego.

Alpha, its sister ocean data station, now is moored in the same area, where ocean depth is 17,000 feet.

Both Alpha and Bravo are being used in ONR's North Pacific Study, an investigation of the nature of large-scale non-seasonal variations in oceanographic and meteorological conditions that apparently involve the entire Northern Hemisphere.

A better understanding of interrelationships between the ocean and the atmosphere from the study should improve long-range forecasting of weather, ocean currents, ship and aircraft operating conditions, and commercial fishing probabilities.



OCEAN STATION—Convair's ocean data station Alpha collects oceanographic data in North Pacific for daily transmission to San Diego in Office of Naval Research study.

Scripps Institution of Oceanography, the Coast Guard, and Convair are participants in the study, which Scripps directs for ONR.

Robert Devereux, Convair ocean data systems manager, said Alpha is equipped with a new very-high-frequency (VHF) satellite communications system for relay of telemetry data through NASA's Applications Technology Satellite-1.

(ATS-1 was launched Dec. 6,

(Continued on Page 4)

Six Holidays Ahead For Convair Division

Thanksgiving, Christmas, New Year and year-end holidays have been announced. They are:

Thursday, Nov. 27—Thanksgiving Day.

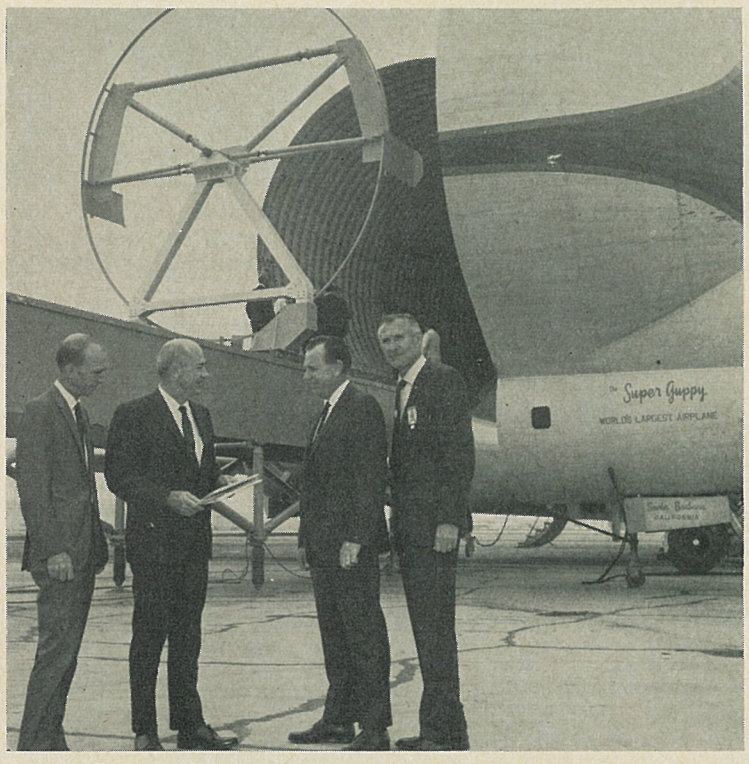
Friday, Nov. 28 — Additional holiday.

Thursday, Dec. 25 — Christmas Day.

Friday, Dec. 26 — Year-end holiday.

Thursday, Jan. 1 — New Year's Day.

Friday, Jan. 2 — Year-end holiday.



TRANSPORT TALK—Discussing plans for ferrying DC-10 fuselage sections from Lindbergh Field to Long Beach aboard "Super Guppy" are, from left, J. B. Hurt, Convair DC-10 program manager; J. F. Daniels, Douglas resident manager at Convair; R. D. Allen, Douglas manager of transportation; and J. C. Ruzich, Convair general supervisor of shipping and traffic. Rings were used to simulate fuselage sections in test.

Loading DC-10 Fuselage For Airlift Simulated

A test to simulate loading of Convair-built DC-10 tri-jetliner fuselage sections into Aero Spacelines' whale-shaped "Super Guppy" was conducted Sept. 25 at Lindbergh Field.

The "Super Guppy," the world's largest commercial cargo plane, will ferry three fuselage sections for each DC-10 from Convair's Lindbergh Field plant to Douglas Aircraft Company's Long Beach plant for final assembly.

The forward C-D section, about 55 feet long, with its transporter weigh about 28,000 pounds. The aft F-G section, about 39 feet long and weighing about 16,000 pounds, will be flown with the central E section, which is about 33½ feet long and, with its transporter, weighs 13,000 pounds.

In the loading test, rings simulating forward and aft dimensions of the C-D segment were attached to a modified pallet and were pulled into position in the "Super Guppy" after being lifted by crane to a cargo-floor-level portable loader.

"This verified proper alignment and fit of the C-D section in the 'Guppy,'" John Ruzich, general supervisor of shipping and traffic, said.

The DC-10 fuselage sections have a 20-foot diameter. The cargo compartment in the "Super Guppy" is 25 feet in diameter.

Among personnel on hand for the loading test were J. B. Hurt, Convair DC-10 program manager; R. D. Allen, manager of transportation for Douglas; J. F. Daniels, Douglas' major subcontracts resident manager at Convair; John Rogers, Aero Spacelines coordinator; J. N. McPheeters, Convair's chief of stores and traffic; and Ruzich.

A permanent 25-ton steel hydraulic screw-jack-type loader, manufactured in Germany, will be installed below ground-level near Convair's north flight gate to raise the DC-10 fuselage sections on their special transporters 11 feet to the "Super Guppy" cargo deck.

L. J. Ninteman Construction Co. is producing a concrete and reinforced-steel pit, 55 feet long and 3 feet deep, to house the loader.

Atlas Missile Display 'Bathed'

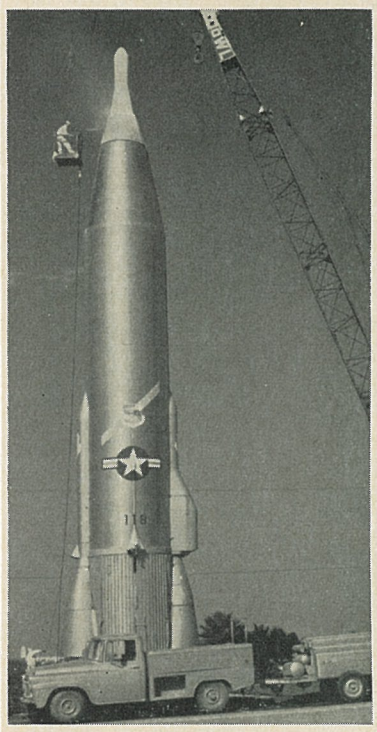
The Atlas best known to Convair employes late last month got its first cleaning since being erected outside CRA's Missile Park on Feb. 9, 1963.

Soapy water was sprayed at high pressure on the stainless steel tank Sept. 29 then, after being rinsed, parts of the oft-photographed missile display were repainted.

The old ICBM, officially Atlas 2-E, is a veteran of early static test firings at Sycamore Test Site S-2.

It was donated to the former Astronautics division, now part of Convair, by the U. S. Air Force

(Continued on Page 2)



FIRST BATH—Atlas missile at CRA Missile Park gets first cleaning since it went on display in 1963.

SAMSO Orders Six New SLV-3Cs

Convair has been awarded a $14,303,150 contract from the Air Force Space and Missile Systems Organization (SAMSO) for the manufacture of six SLV-3C launch vehicles and the conversion of one SLV-3.

The contract calls for Convair to fabricate, assemble, test, inspect and deliver the vehicles in the 1970-71 time period.

The six vehicles are slated to become AC-22 through AC-27. Planned uses are:

AC-22: launch Orbiting Astronomical Observatory-C (OAO-C). The last OAO was launched by AC-16 on Dec. 7, 1968 **(GD/NEWS Dec. 18, 1968)**.

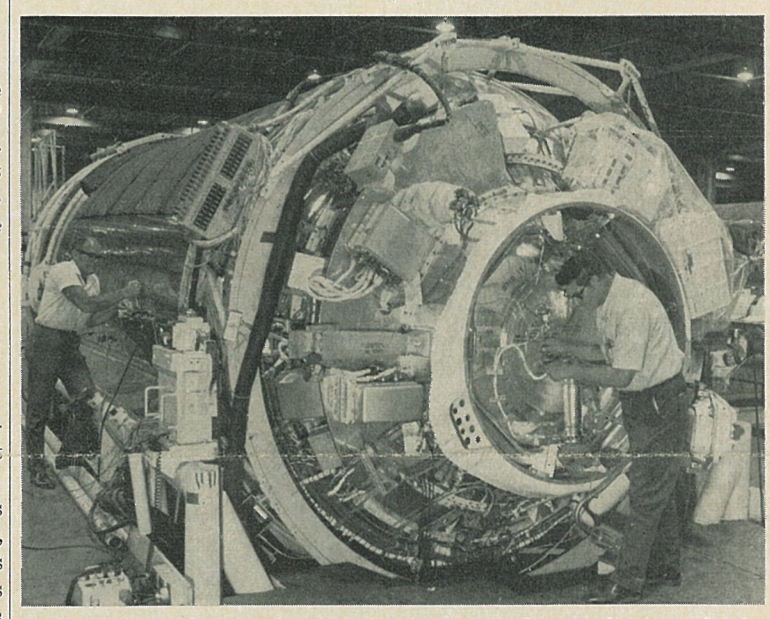
AC-23 and AC-24: launch the 1971 Mariner-Mars probes. Convair already had received the contract from NASA for the two Centaurs. The 1969 Mars probes were launched by AC-19 and AC-20 **(GD/NEWS Mar. 5, 1969)**.

AC-25 and AC-26: launch two INTELSAT IV communications satellites **(GD/NEWS April 30, 1969)**.

AC-27: launch Pioneer F on a Jupiter fly-by mission.

The SLV-3 will be modified to a later configuration for the Air Force.

The contract was negotiated by a team headed by Robert W. Frye, administrator of Convair contracts for Air Force launch vehicles.



CENTAUR—Convair has received contract for production of Atlas SLV-3C which will launch this Centaur. When joined, Atlas and Centaur will become AC-22 and will put Orbiting Astronomical Observatory-C into orbit in 1971. Working on Centaur are Jack Oliver, left, and Hubert Jones, both of Dept. 761-0.

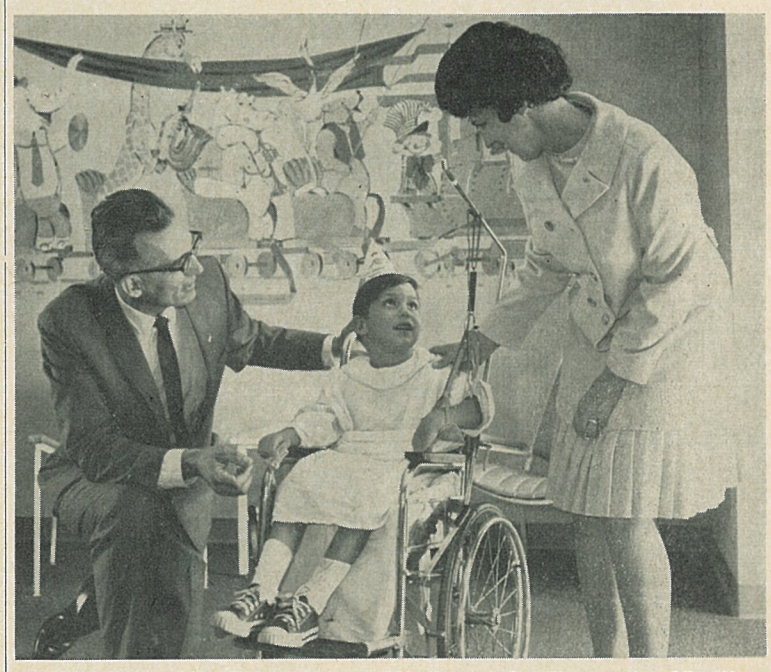
Electronics-SD Con-Trib-Club Aims at '100 Per Cent' Goal

One hundred per cent participation and an increase in the number of "Fair Share" contributors are goals in the Electronics-SD Employes' Con-Trib-Club annual campaign being held this week.

Electronics-SD employes will be contacted by Con-Trib representatives and given opportunity to authorize small weekly payroll deductions for "once for all" giving to support almost 100 health, youth, and community service organizations in San Diego County.

Those authorizing "Fair Share" will have 8/10 of 1 per cent of

(Continued on Page 2)



CON-TRIB CONCERN—Harry Shirley, left, Electronics-SD "key man" for United Crusade, and Gloria Cooper, Employes' Con-Trib-Club secretary, get acquainted with Benjamin "Buddy" Stairs, 5, at Children's Health Center. Electronics-SD employes, through Con-Trib-Club, are providing equipment for new diagnostic and treatment center where Buddy will receive therapy.

Electronics-SD Con-Trib-Club Aims at '100 Per Cent' Goal

(Continued from Page 1)

salary—equivalent of pay for 4 minutes work each day — set aside automatically for Con-Trib use.

Electronics-SD's Con-Trib committee gave $18,000 to the United Crusade this year to assist 75 agencies represented in the United Community Services of San Diego County. This totaled more than $25 (or about 50 cents each pay period) from each employe and was pledged late last year and paid in quarterly increments.

The six-member committee, composed of representatives from management and employe-representative labor organizations, also has disbursed more than $7,000 to other deserving community-service organizations during the past year.

Included was first half of a $1,000 pledge for purchase of treatment room equipment for a $1.2 million diagnostic and treatment center under construction at Children's Health Center (formerly Children's Hospital).

Other recipients included the House of Guiding Hands (for retarded children) in Lakeside, Junior Achievement building fund, March of Dimes, Arthritis Foundation, Muscular Dystrophy Association, Boys Club of Linda Vista, Girls Club of Chula Vista, and Salvation Army's Christmas effort.

Four Electronics - SD employe families have been given Emergency Aid grants totaling more than $1,500. This provided assistance in hardship cases resulting from fire that destroyed a family's home and belongings, a death in a family, and long-term employe illnesses.

The Employes' Con-Trib-Club committee includes George Leesch (chairman), Gloria Cooper (secretary), Fred Maus, Bill Lynt, Gerry Lynn, and Ray Trent. Each request for aid is investigated by one or more members of the committee.

Harry Shirley, Dept. 614 electronic project engineer who served as Electronics-SD loan executive for last year's United Crusade, is "key man" to help acquaint employes with work of the 75 Crusade-supported organizations during this week's Con-Trib-Club campaign.

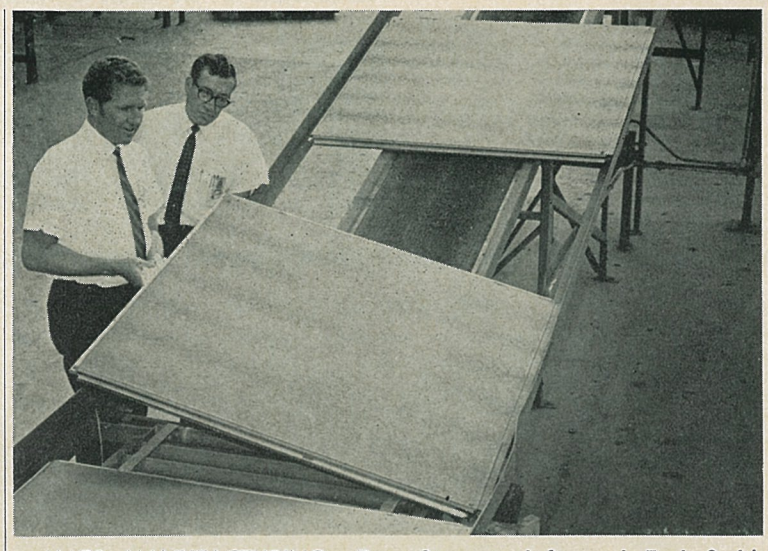
Al Degler, chief plant engineer, is "loan executive" to the United Crusade from Electronics-SD this year (GD/NEWS, Sept. 3, 1969).

Each employe pledging his "fair share" to the Employes' Con-Trib-Club will receive a tie-tack or stick-pin-type "check pin" to indicate his support. All participants will receive window stickers for display at their homes to indicate they support all approved charities through the Con-Trib-Club.

Magnuson Speaks At ZD Conference

W. E. Magnuson, Convair's chief of special projects in reliability control, was key speaker at a Zero Defects conference recently in Indianapolis, Ind.

The conference, attended by 180 defense contractors, was sponsored by the Chicago Defense Contract Administration Services Region, Defense Supply Agency.



MATS MANUFACTURING—Don Stewart, left, and Earl Smith check prototype airfield landing mats coming off automated assembly line at Convair's Lindbergh Field plant. New mats will be used in Army tests at Vicksburg, Miss.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Soon, those who were in the Savings and Stock Investment Plans in 1966 will receive cards by which they can elect to withdraw funds in their 1966 accounts, or elect to leave the funds in the Plan. Wouldn't it be safer for members to receive confirmation from the trustee that cards reflecting members' decisions have been received?

A—Savings and Stock Investment Plan procedures are established by the trustee (Bankers Trust of New York) and are consistent with some 45 other trusts handled by the trustee. General Dynamics is aware of the importance of careful handling of Savings Plan Cards and check-off lists are maintained to account for every card to assure that they are received and processed properly, and that the members' wishes are honored.

★ ★ ★

Q—Can payroll deduct additional money from our checks to cover tax estimate pre-payments?

A—Payroll deductions programmed for the division payroll are planned to meet the basic requirements of some 14,000 employes. It cannot be revised at frequent intervals to meet specific tax requirements of relatively few individuals.

If you need added deductions for taxes, it is suggested you use the industrial allotment plan whereby you may deduct whatever amount desired (minimum 50 cents; maximum to within $10 of your net) and withdraw money as you may need it. An alternative is to file a revised W-4 form indicating you are "single" and claim no exemptions (if you are not already doing so).

★ ★ ★

Q—If I die before retirement, my wife will receive my contributions to the retirement plan, plus interest. From time to time as benefits have been adjusted, employe contributions to the retirement plan have been reduced. Under normal circumstances, this is fine. However, in case of my death before retirement it means less money for my wife. I would rather not have my contribution reduced.

A—Your concern is understandable. However, if and when your contributions are reduced, you can achieve your objective by establishing an industrial allotment, or a bank or building loan account depositing the difference.

★ ★ ★

Q—Could the guard at LF Gate 5 direct traffic at the pedestrian crosswalk during the time the railroad engine is switching? This is between 6:30 and 6:45 a.m. Some guards do this and others don't; it is a considerable help since all cars can flow smoothly through without each having to stop at the crosswalk.

A—All guards have been instructed to assist, when possible, in the movement of vehicles at LF Gate 5 pedestrian crosswalk. At times the Gate 5 guards have more than they can handle checking employes, pedestrians and vehicles, entering the plant. Therefore, there may be periods during which a guard may not be able to assist.



"You've caught the wrong car pool."

Landing Mat Line Produces Prototypes

Convair's automated landing mat assembly line was reactivated briefly late last month to produce 100 prototype mats.

C. L. Jackson, landing mat program manager, said the 4x4-foot modular mats were produced for Kaiser Aluminum and Chemical Corp. of Oakland in response to a government request.

George E. Farnham, Kaiser resident manager at Convair, said the mats were made from the same type of material used previously to produce more than nine million square feet of XM-19 mats for the U.S. Army but incorporated design changes to strengthen them for higher impact resistance.

Minor modifications were required for the mat assembly line to produce the special test mats. The line is located in Bldg. 2 at Lindbergh Field and is considered a rarity in the aerospace industry because of the level of automation involved.

Farnham said the honeycomb-core aluminum mats will be used in tests at the Army Waterways Station in Vicksburg, Miss., to verify their resistance to impacts from cable-hook aircraft landings.

"In limited-length fields in Viet Nam and other areas, planes such as the F-4 could be used if provision can be made for cable-arrested landings and catapult launches," Farnham said.

"We hope to secure a production contract for the new mats. Like those previously fabricated, they are designed for easy assembly and transportability."

The same Convair-Kaiser team that successfully produced more than a half-million mats, many of them now in use at U. S. Air Force fields in Viet Nam, handled production of the test mats.

Earl G. Smith of Convair's Dept. 149-7 coordinated all fabrication activities and Don L. Stewart of Dept. 250-2 was in charge of production line modifications and mechanical operations. Tim Yoder was Kaiser Aluminum's quality control representative.

"We were surprised at the ease with which production was resumed," Stewart commented. "The line required only minor adjustments, although it had been standing idle almost a year."

Jackson said the test run "renewed our confidence that we can handle quantity production orders and design modifications without difficulty."

Kaiser Aluminum has maintained its resident manager's office at Convair since completion of the mat production contract last year for liaison with the armed forces and to handle bid and proposal efforts.

Atlas Display Gets Soapy Water Bath

(Continued from Page 1)

as a tribute to the men and women who designed and developed the Atlas.

Management Club members spent 2,500 off-duty hours refurbishing the Atlas, which was stripped of its internal bulkheads and mounted over a plywood frame.

The display looks like E-series Atlas ICBMs that served in the Strategic Air Command's missile arsenal and is topped by a wooden mock-up of a Mark III re-entry vehicle.

Many visitors to San Diego see the old Atlas because it is listed on tourist guides as one of San Diego's interesting sites.

Apollo 11 Movies Placed on Sale

Movies of the "Epic Flight of Apollo 11" are now on sale at CRA outlets and employe benefits.

The 100 foot color movies are available in "super" or regular 8 mm and sell for $8.

Log Book Entries

Service Emblems

CONVAIR

Service emblems between Oct. 1 and Oct. 15.

Thirty-year: Dept. 002, W. L. Berkheimer; 059, R. B. Thompson; 402, G. A. Grossaint; 832, N. W. Johnson.

Twenty-five-year: Dept. 400, C. J. Oswald; 511, P. L. Akins; 545, H. C. Shoffner.

Twenty-year: Dept. 019, S. H. Delgadillo, F. Gomez Jr.; 059 Virginia M. Gordon; 250, K. E. Trondle; 400, O. N. Presley; 460, E. R. Baldwin; 524, Mildred I. Huey; 840, Nora D. Bone, Margaret D. Hand; 999, M. W. Small.

Fifteen-year: Dept. 001, C. Jones; 046, E. L. Vess Jr.; 149, R. E. Carver; 195, J. L. Rolston, E. J. Whitley; 250, W. J. Stanley, T. Gurbacki; 402, Carol J. Bekhurst; 515, W. J. Golombek, J. A. Holland; 524, Helen F. Golland; 565, Lenna M. Omanson; 575, A. L. Cappelen Jr.; 589, H. Gottschalk; 589 W. H. Discher; 780, S. J. Gwazdacz.

Ten-year: Dept. 001, Suey P. Tom; 027, Jewel E. Harris; 046, Louise O. Jimmerson; 170; J. P. Wayman; 194, P. Perrone; 195, Florence C. Jaeger; 515, R. G. Johnson, La Nelle Smith; 517, Ruth B. Wenger; 570, A. R. Stone; 731, J. P. Gomez, K. E. Secor; 780, W. R. Floyd, J. B. Levack; 833, E. G. Yanosov; 966, G. Lehrer; 979, J. J. O'Leary; 985, R. C. Ihrig; 988, W. L. Evans, F. C. Taylor, B. G. Sherwood.

ELECTRONICS

Service emblems due during the month of Sept.

Fifteen-year: Dept. 422, V. F. Harris; 619, R. J. Jacobs.

Ten-year: Dept. 105, P. E. MacIntosh; 422, K. E. Beckner; 582, Frances R. Nash; 614, H. Geerts.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending October 3.

Dept. 400, J. M. Abernethy, W. T. Grinsell Jr., $7.50 each (joint awards); 831, R. D. Behlman, $15; 985, S. W. Botta, $35.60; 144, W. L. Burkhalter, $50.60; 733, N. Chaudoin, $15; 420, M. G. Clark, $55.60; 027, W. C. Griffin, $16.05; 027, R. J. Guidry, $51.80; 780, E. J. Henderson, $15; 001, D. C. Herstedt, K. K. Jones, $7.50 each (joint award); 979, J. T. Hicks, $26.10; 027, W. T. Higgins, $49.50; 001, D. E. Howard, $19.50; 780, E. J. Hultz, $15; 019, H. W. Jackson, $15; 507, R. H. Lewis, $26.40.

Dept. 250, R. B. Mason, $15; 015, J. K. McDonough, $34; 019, M. T. McNeel, $30.80; 810, V. S. Miller, $15; 027, L. F. Pendarvis, $65; 027, V. Prado, $25.20; 584, D. C. Reda, $15; 143, M. J. Russell, $90.45; 149, S. M. Rynearson, $46.60; 541, A. Sansone, $15; 979, R. W. Sather, $25; 401, T. D. Schirtzinger, 205.70; 001, C. E. Scott Jr., $19.50; 400, F. D. Slavens, $46.10; 584, J. A. Stark, $15; 027, R. D. Switzer, $16.80; 059, C. E. Thornton, $16.05; 985, E. M. Van Huss, $15.

Retirements

CONVAIR

BOURGEOIS — Philipp, Dept. 250-3. Seniority date Feb. 25, 1954, retired Sept. 30.

CHERRY — Michael R., Dept. 460-0. Seniority date Feb. 19, 1957, retired Sept. 30.

EVANS—William S., Dept. 512-0. Seniority date Nov. 7, 1951, retired Sept. 26.

FRICHTEL—Joseph T., Dept. 401-5. Seniority date Sept. 21, 1939, retired Sept. 26.

LUCORE — William R., Dept. 761-0. Seniority date June 23, 1947, retired Sept. 30.

McGOWAN — Scott A., Dept. 731-0. Seniority date Oct. 31, 1958, retired Sept. 26.

RIDDELL — Walter C., Dept. 586-0. Seniority date Oct. 31, 1958, retired Aug. 21.

SENK — Carl, Dept. 401-4. Seniority date Oct. 25, 1954, retired Sept. 26.

SIMINGTON—Andrew J., Dept. 835-1. Seniority date March 18, 1941, retired Sept. 26.

TAYLOR—Leslie A., Dept. 979-3. Seniority date Nov. 25, 1958, retired Sept. 26.

Rider-Driver

CONVAIR

CAR POOL WANTED — From Escondoido to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Phone Ken Lindsey, ext. 1123 LF or (home) 746-5171.

RIDE WANTED — From Adams and Idaho to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call Richard Harrison, ext. 2531 LF or (home) 281-7163.

Personals

CONVAIR

The family of Arthur W. Koenig wishes to express gratefulness for the beautiful flowers and cards of sympathy. They will be of great comfort in the days to come.

Jeannette Koenig

* * *

We wish to express our thanks and deep appreciation to our many friends for the flowers and contributions they have sent us. Their loyalty and consideration will always be remembered.

Mrs. Henry Williams and family

Deaths

CONVAIR

DOLAND—Leo W., retired Oct. 31, 1962, Dept. 250, died Sept. 25. Survived by his wife, Alice.

HOWLAND—James E., Dept. 401-4, died Oct. 5; survivors include wife, Joan, and five sons.

KOENIG—Arthur W., Dept. 142, died Sept. 27. Survivors include wife, Jeannette, two sons, Arthur, Duane, a daughter, Linda Kay, and 4 grandsons.

LOYA—Asencion, Dept. 049-0, died Oct. 4; survivors include wife, Julia; a son, Robert, and a daughter, Norma Jean.

MOSS—James W., retired Aug. 17, 1962, died Aug. 22. Survivors include wife, Mildred, a son, James, a daughter, Beverly Lowry, and five grandchildren.

PALKOVIC — Steve H., retired Aug. 30, 1958, Dept. 603, died Sept. 25. Survived by his wife, Ella.

WEAST—Walter J., retired April 15, 1960, Dept. 401, died Sept. 24. Survivors include his wife Clara Belle.

YAGER—John C., retired Feb. 25, 1966, Dept. 780, died Oct. 5. Survived by his wife, Estella.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

New Corporate Movie Pictures Scope of GD

"The Company They Keep," a new Corporate report film on the employes and products of General Dynamics, has won a first place "Indy" award as best film in the industrial relations category of the 1969 Industrial Film Awards competition sponsored by Industrial Photography magazine.

Key activities from all divisions and subsidiaries are covered in the film—ranging from General Dynamics' Holland submarine of 1900 to its modern nuclear fleet; from its first telephone to Datamation; from its first airplane to the F-111 and the Atlas-Centaur; and from its coal mines and lime quarries of 1919 to its present Resources Group.

"A company is known by the people it keeps," the narrator comments in the film's introduction. "These are the people—100,000 of them—by whom General Dynamics is known. Some are clerks and some are chemists. One in every eight is an engineer. Most are craftsmen commanding the varied skills and specialties demanded by today's expanding technology . . .

"Our work is concentrated in four major areas of engineering development: marine systems, electronics, aerospace, industrial resources. In these four fields we specialize in the big, technology-stretching projects that create whole new frontiers in the state of the art.

"From the heart of the earth to the heart of the electron—from deep sea to deep space—almost every major project we've ever undertaken was technically impossible at the time we started work on it.

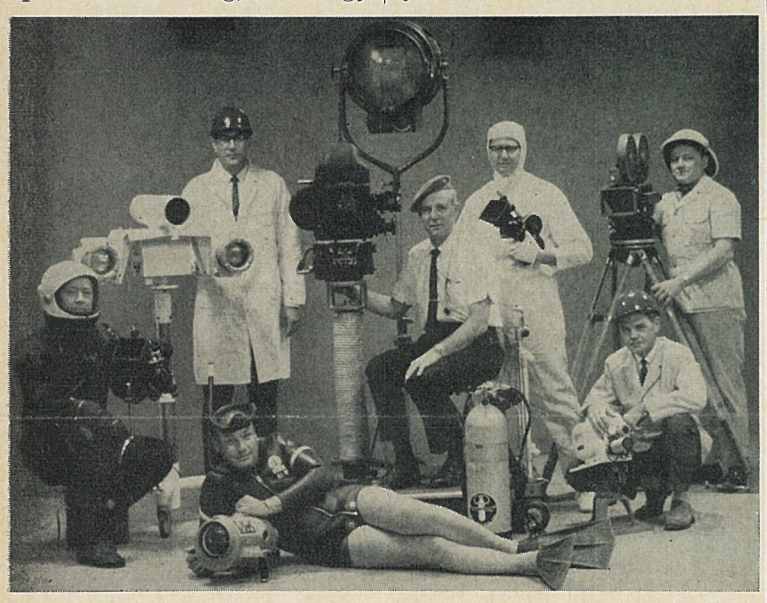
"To master challenges like these, the people by whom we are known must be the best there are. And so must the company they keep."

Copies of the film will be distributed to divisions and subsidiaries for showing in new employe orientation programs and to employe and customer groups and community organizations.

Convair division's motion pictures and television department made the film for General Dynamics' public relations department, with some of the film footage being provided by other divisions.

Raymond Hunter McPhee, director of film production for Corporate Headquarters, was producer-director-writer. Editors were Bob Montague, chief of motion pictures and TV for Convair, and Betty Miller.

Cameramen were Bill Carter, Chuck DeMund, Bill McClure, Bob Gobrecht, Mark Irwin, and Bob Quittner, all from Convair.



CAMERA CORPS—Versatility of Convair's motion pictures and television department, reflected in recently produced award-winning General Dynamics report film, is illustrated by cameramen and equipment. Clockwise, from left, are Bill Carter, aircraft; Frank Finch, missiles and construction; Hal Reavely, studio; Bob Quittner, laboratories; Bill Woods, field coverage; Blake Barton, instrumentation and data recovery; Chuck DeMund, underwater.

Material Stress Damage Assessed by Holography

Applied research laboratory scientists are developing holographic techniques for measuring damage done to materials under stress.

"The technique enables us to determine how much structural materials are distorted when stressed and indicates when fatigue cracks are about to develop from repeated stresses," said Dr. D. M. Gibson, staff scientist at Fort Worth division.

In either case, a precise record of the initial shape of a part's surface is made on a hologram. In this process, part of the light from a laser beam is shone on the surface and reflected onto a photographic plate (hologram). The rest of the laser light shines directly on the photographic plate.

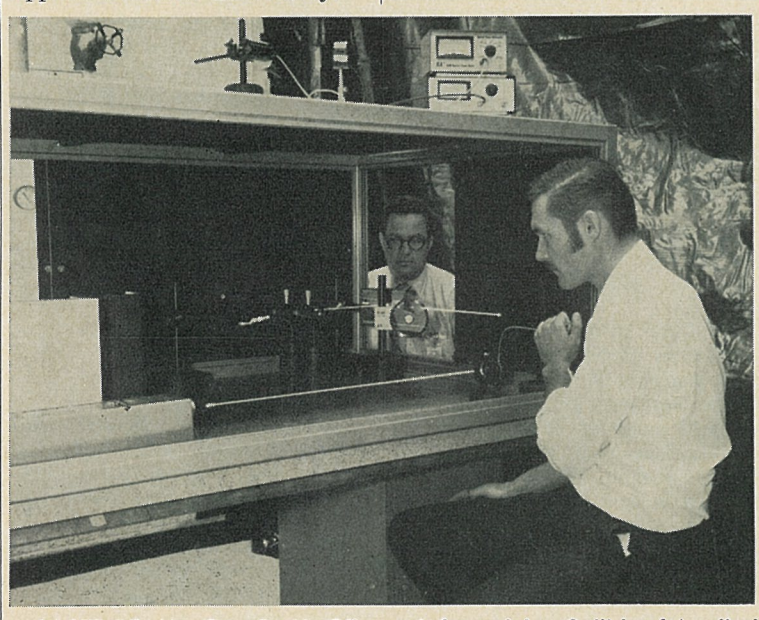
This creates a photographic "profile" from which later variations can be measured when subjected to stresses.

"From such comparison," Dr. Gibson said, "we can tell whether a structural part is too highly stressed or whether fatigue cracks are about to develop."

The holographic techniques allow scientists to measure distortions as small as 25 microinches and to determine where cracks are about to occur.

"These are only two of many useful applications of lasers to the sophisticated design and manufacturing problems characteristic of the aircraft industry," said Dr. Gibson.

Other participants in the project are Dr. Jon Sollid, research scientist, and Dr. Jerry Swint, senior nuclear physicist, in the Applied Research Laboratory.



LASER BEAM—Drs. D. M. Gibson, left, and Jon Sollid, of Applied Research Laboratory, are evolving holographic technique for detecting cracks in metals before they occur.



CONFERENCE—Industrial relations and accounting representatives of Corporate Headquarters and various divisions met in Fort Worth recently to discuss employe benefits. They are, seated from left: Richard Bassett, FW; F. J. Beirne, Rochester; J. A. Hawkins, N.Y.; Paul M. Jepson, Rochester; E. C. McManus, N.Y.; Dave Robertson, N.Y.; Bob Bardone, N.Y.; Eric Torp, Convair; Tom Allson, Pomona; Paul Allgire and Roger Brown, Convair; Herb Naish, Pomona; standing, from left: Paul Norman, FW; Don Cunningham, FW; Ken Wulfemeyer, Pomona; Lynn Wendt, Pomona; Roy Jarl, FW.

Savings Plan Members Since 1966 Must Make Distribution Decision

Early next month, more than 25,000 salaried and hourly employes of General Dynamics, whose participation in the GD Savings and Stock Investment Plans dates back to 1966, will face an option of electing to withdraw funds credited to their accounts in the year 1966, or of leaving the funds in the Plans for continued investment.

Early in November, two cards will be sent to each 1966 member. (Some employes will receive four cards, due to participation in both salaried and hourly Plans during 1966.)

The card for electing to withdraw 1966 funds is colored blue for salaried and green for hourly. Cards for electing to leave funds in the Plans are orange for salaried and yellow for hourly.

Funds in the 1966 accounts involve both the contributions made by the Plan member and those by General Dynamics, with the Corporation paying in $1 for every $2 the member saved.

The appropriate card should be signed and returned to industrial relations before Nov. 28 (a holiday). Early return is strongly advised.

If a withdrawal is requested, the ultimate distribution will be based upon the account's value as of Dec. 31, 1969. As of that date, the trustee, Bankers Trust Co. of New York, will convert U. S. Bonds and mixed portfolio stock holdings (if applicable) into cash, and will arrange for issuance of General Dynamics common stock certificates (if GD stock is included in the member's account). Fractional shares will be paid in cash.

Bankers Trust expects to complete processing of accounts and distribution of funds (and stock, if involved) by mid-February, 1970.

Whether members withdraw, or delay withdrawal, there are tax considerations. However, for those who elect to withdraw 1966 funds, there will be an amount to declare for 1970 income tax returns, involving the sum contributed by General Dynamics in the member's behalf during 1966, as well as any interest or dividends. (A simplified explanation of tax factors will be included in the next issue of **GD/NEWS.**)

"As stated last year, the decision to withdraw funds or leave them is a personal one and should be viewed in the light of individual and family financial planning," Algie A. Hendrix, Corporate vice president, commented.

"Deferment until retirement might be advisable where an individual wishes to build up a larger retirement estate. However, for those with immediate extra financial obligations, such as children in college or dependents requiring special expenditures, the considerations are different."



TIME-STOPPER—Jan Durett of Fort Worth division's Dept. 15-2 reminds General Dynamics people they'll "gain an hour" at 2 a.m. Oct. 26 when clocks should be set back to 1 a.m.

Former Electric Boat Executive Takes Reins of Quincy Shipyard

Lloyd Bergeson, a veteran shipbuilding executive, has been appointed general manager of the Quincy, Mass. division of General Dynamics and a vice president of the Corporation, Roger Lewis, president, announced last week.

Bergeson succeeds Robert V. Laney who has been named special assistant to the president of General Dynamics.

Bergeson's assignment is effective immediately.

He has complete managerial responsibility for the Quincy shipyard which General Dynamics purchased and opened Jan. 1, 1964, and which is engaged in the construction of naval and merchant vessels.

Bergeson was formerly a General Dynamics executive for 11 years, starting in 1951 at the Corporation's Electric Boat division in Groton, Conn. He served as planning manager, and manager of manufacturing services at Electric Boat. He coordinated all of the Corporation's design and construction activities leading to production of the first U. S. Polaris submarine, USS George Washington.

In 1962, Bergeson became a self employed industrial management consultant and four years later was appointed as an executive officer of Litton Industries.

With Litton he served as executive vice president of Ingalls Shipbuilding Corp.

Born March 3, 1917 in Newton Center, Mass., Bergeson attended Newton public schools and was graduated from Massachusetts Institute of Technology in 1938 with a degree in naval architecture and marine engineering,

Prior to joining Electric Boat in 1951, Bergeson was assistant to the manager of the Hanford operations office of the U. S. Atomic Energy Commission in Richland, Wash.

ENGINEERING
partner in rebuilding urban america



MEMORIAL—Vultee Club members from Convair attending ceremony near Sedona, Ariz., at which plaque was erected in memory of Jerry Vultee were (clockwise from lower left) Wes Magnuson, Larry Tuttle, Nick Keough, and Byron Ferguson.

A Fitting Salute

Plaque Placed in Mountains Near Site of Vultee Crash

Jerry Vultee spent his life making machines so men could fly, crossing wastelands and mountains in the air.

Last month former associates walked into the wilderness to dedicate a plaque near the site where Vultee failed to cross his last mountain.

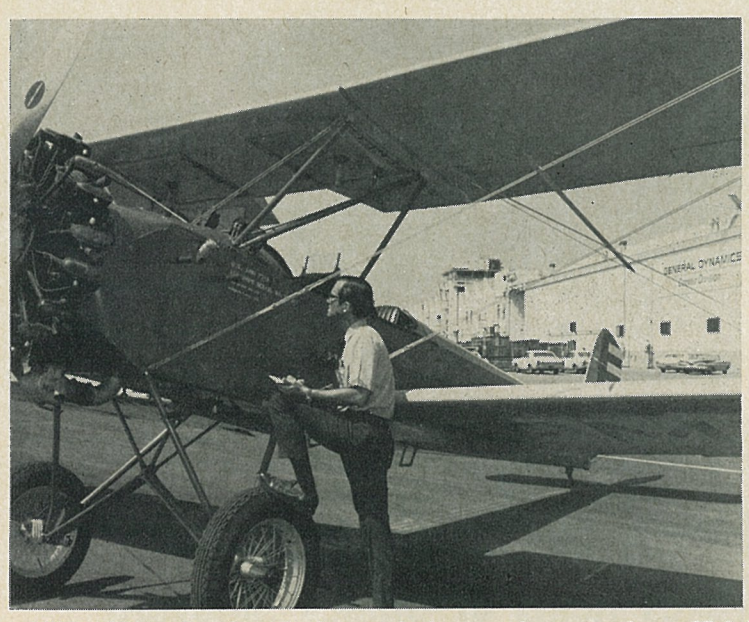
The pilgrimage was a joint project of the Vultee Club (composed of former employes of Vultee Aircraft Co., one of Convair's antecedents) and the Sedona (Ariz.) Westerners, an historical society. The plaque was permanently placed in the rugged mountain terrain where Vultee and his wife died Jan. 29, 1938 in the wreckage of their private plane during a blinding snowstorm.

Among Vultee Club members present for the brief ceremony were Larry Tuttle, Wes Magnuson, Nick Keough and Byron Ferguson, all of Convair division.

From Sedona, Ariz. the party drove 10 miles into the hills, then hiked another two miles to the site.

Sedona Westerners anchored the plaque in concrete.

As the memorial ceremony ended, a hawk, circling high overhead, dipped his wings in un-rehearsed salute to the memory of a fallen pilot.



LIKE NEW—Gordon Jackson, design engineer and unofficial Convair historian checks accuracy of insignia and serial number on 41-year-old Consolidated PT-3 "Husky" which sports new paint and markings.

New Career

Aging Bi-Plane, Brave in New Paint, Takes Off on Exhibition Tour

A bi-plane from the flying goggles, leather helmet, white scarf era of aviation returned to Convair's Lindbergh Field plant recently for painting and polishing prior to a pair of bookings at California and Nevada aircraft festivities.

The 41-year-old Consolidated Aircraft PT-3 "Husky" primary trainer plane, received a bright yellow and blue paint job and authentic U. S. Army Air Corps insignia.

Painted by Convair Dept. 031, wing and tail insignia and manufacturer markings were matched to original specifications using templates researched and produced by Gordon Jackson, design engineer.

The "Husky" was first displayed at San Diego's Miramar Naval Air Station in a historical aircraft exhibit during the base's annual air show. The two-seat plane then travelled by truck to Las Vegas for inclusion in the annual "Tailhook" reunion for former carrier-based pilots which was attended by Convair's Jack Bowers, general manager, and E. R. Peterson, vice president-research and engineering, as well as others from Pomona division and General Dynamics Corporate Headquarters.

The PT-3 was recently flown cross-country to San Diego for permanent inclusion in the Aerospace Museum in Balboa Park **(GD/NEWS, April 2, 1969).**

Bravo Returns, Alpha Takes up Ocean Station

(Continued from Page 1)

1966, from Cape Kennedy by Convair's Atlas SLV-3 No. 5101 and an Agena second-stage vehicle and is "parked" in synchronout orbit 22,300 miles above Christmas Island.)

Quality of high-frequency ionospheric radio transmissions direct from Alpha to Convair's ocean data interrogation/reception station in La Jolla are being compared with VHF transmissions through the satellite.

Alpha's 40-foot mast is equipped with sensors at 5, 10, and 15 meters above sea level for measuring solar radiation, wind velocity, rainfall, air temperature, dew point, and barometric pressure. Oceanographic sensors from sea-surface to 500-meter depth obtain current speed and direction, temperature, pressure, and salinity data.

Convair interrogation/reception station engineers interrogate Alpha daily from a location adjacent to Scripps pier in La Jolla. Information from the preceeding 24 hours is telemetered in about 10 minutes and is recorded on magnetic tape for analysis there, at Lindbergh Field, and at Scripps. It also is relayed immediately to the U.S. Weather Bureau and the Bureau of Commercial Fisheries.

Ken Samples is Convair's ONR project manager.

Both Alpha and Bravo are 40 feet in diameter, weigh 100 tons when ballasted with sea water on station, and contain systems for electrical power generation and data acquisition, storage, and transmission.

Electrical power for operating the station systems is stored in a 20-cell nickel cadmium battery. When voltage drops to a predetermined level, the battery is recharged automatically by two engine-generators that operate alternately.

The two data stations are designed to operate unattended in the open ocean for periods up to one year.

Lt. Col. Garrison Gets New Title

The Defense Contract Administration Services Plant Representative Office (DCASPRO) at Convair was reorganized, effective Sept. 30.



Lt. Col. Garrison

The new organization is called Defense Contract Administration Services Office (DCASO) and is headed by Lt. Col. Joseph B. Garrison, USAF, who relieves Col. Charles F. Merz.

Col. Merz, San Diego DCAS District commander, had been wearing two hats, one as district commander and the other as Convair DCASPRO commander **(GD/NEWS, Aug. 20, 1969).**

Lt. Col. Garrison spent four years at the Rocketdyne Air Force Plant Representative Office, four years at Ballistic Systems Division in missile procurement, and two years as chairman of the Minuteman production board before coming to Convair as deputy plant representative in 1967.

In other DCASO changes, Olen Stutzman of the San Diego district replaces P. D. Sanchez, who is transferring to the San Diego district as chief of the contract administration division, and Capt. V. M. Karlin becomes chief of the production division.

A. E. Hinck and W. E. Turner remain as chiefs of the quality assurance division and office of engineering, respectively.

If one copy is sufficient, why order more?



PAN AM FOLLOW-ON—Order has been received from Pan American World Airways for more than 50 DatagraphiX 1110 displays. Systems will display variety of flight data and will be linked directly to Panamac, Pan Am's worldwide electronic reservations complex. Shipment and delivery of first units are expected to begin in January.

Pan Am Increases Order For DatagraphiX Systems

A second follow-on order for over 50 DatagraphiX CHARACTRON® Display Systems has been received from Pan American World Airways. The initial $1.3 million contract last year called for 57 of the desk top displays and associated control units.

Pan Am, first airline to use the 1110s, has integrated the display units into its vast Panamac computer network that provides instant information and data on reservations that is visually displayed on a cathode ray tube.

Additionally, other air travel data such as flight schedules, customs regulations, connecting transportation arrangements and hotel availability, stored in the general purpose terminal interchange (GPTI) is equally available for quick retrieval.

George Durr, sales manager, display system, said the majority of the follow-on electronic displays are slated to be used in Pan Am's GPTI. He said the airline will then have in excess of 55 "stand alone" units in the GPTI. The remaining displays will go into the basic Panamac system.

Nate Waddington, manager of DatagraphiX DataCom engineering, said deliveries on the new order are expected to begin around the first of next year. It is anticipated that by mid-year all units will have been shipped. The display systems will be installed by DatagraphiX customer engineers at the airline's reservations headquarters in the Pan Am Building in New York City.

First follow-on to the initial order was received last September, according to Waddington, and was for new applications. It called for three "mini" multiple station controllers (MSC) with Pan Am placing two of the MSCs in New York City travel agencies.

More Panels Leave Italy

Final fuselage panels in the first DC-10 ship-set built by Aerfer Industrie Aerospaziali, Meridienali left Naples harbor in Italy Monday (Oct. 13) bound for San Diego via New York.

Aerfer is producing above-floor-level skin panels for the McDonnell Douglas tri-jetliner, under subcontract to Convair division.

The final nine panels are traveling aboard the Italian luxury liner Michaelangelo and will be trucked across the country from New York.

Aerfer's Pomigliano D'Arco plant, located six miles northeast of the Mediterranean port of Naples, will produce 300 ship-sets for Convair during the five-year contract.

Market Forecasts Discussed by Panel

Dwight Warner, Convair manager of market analysis, was among members of a special seminar panel at the Fall Conference of the Electronics Industries Association in Los Angeles Oct. 6-9.

Warner, a ten-year Convair veteran, contributed overview information on elements of Navy planning and forecasting and Department of Defense budgeting during a day-long seminar on "Ten Year Forecast of Government Markets."

Course Scheduled In Quality Audit

The American Society for Quality Control will sponsor a two-day course, "Auditing Product Quality," at the Bahia Hotel, Oct. 20-21.

The course is designed to provide managers, supervisors and engineers with the latest techniques needed to make valid quality decisions.

For information call Sam Petcher, ext. 2243.

Gull Hockey Tickets Offered at Saving

Convair Management Club has tickets for San Diego Gulls home hockey games at $2 and $2.50 (a $1 saving). Those available are for games with Phoenix, Nov. 1; Portland, Dec. 5; Vancouver, Jan. 11; Denver, Feb. 7; Portland, March 7, and Phoenix, April 4.

Ticket purchase locations are:

Kearny Mesa — Management Club office, Bldg. 2; employe benefits, Bldg. 8.

Lindbergh Field—Vendors' office, Bldg. 5; employe benefits, Bldg. 16.

AF Plant 19—Employe benefits, Bldg. 4.

Call N. B. Powell Jr., ext. 1024 KM, for additional information.

Employe's Daughter Plays for Stokowski

A 14-year-old Convair daughter recently won the position of first violinist in an International Youth Symphony Orchestra formed in Switzerland and led by famed conductor Leopold Stokowski.

Joan Sturman, San Diego Youth Symphony's first violinist, was selected from outstanding young artists from a number of youth symphonies during a Swiss international music festival in August.

Joan, daughter of Max Sturman, Dept. 195-8 estimator, has been playing the violin four years and joined the San Diego group last year.



DIAMOND CHAMPS—Shown are winning teams in CRA summer softball league play. Top left photo is AF Plant 19 All-Stars with 14-0 record. Top row, from left, are Peter Decourse, Fred Todd, Mike Osborne, Gene Rodgers, Paul Gastaner and Larry Axtell; bottom, from left, are Robert Wood, Luis Inzunza, Gil Chavez (manager), Ray Lucero and Bill Shattuck. Electronics-SD Bombers are in top right photo. Top row, from left, are Al Catalano, John Evans, Tom Munson, Pete Goetz and Joe Smith; bottom row, from left, Bob Eliyas, Les O'Neal (manager) and Tom Reid (captain). Lower left photo is Electronics-SD Super Gnats. From left, at top are Jim Nilles, Bill Koch and Bob Sievers; bottom, are Roger Sloan (manager), Al Ficzeri (captain) and Gary Vance. Photo at lower right shows Cosmo Bums team. At top, from left, are Gene Gray (captain), Van Jackson, Fred Todd, Dick Dray, Bill Alexander, Clinton Gray and John Nelson; bottom, from left, are Tom Groot, Shelley White, Jim Campbell (manager), Jim Miller and Don Sullivan. With diamond play finished for the year, slow-break and fast break basketball will soon be getting under way.

Hawk Canyon Trip Scheduled By Adventurers

CRA Adventurers will camp in Hawk Canyon, a small box canyon in Anza Borrego State Park, and will watch running of the fourth annual Borrego 100-mile off-road race this weekend (Oct. 18 and 19).

Hawk Canyon is reached by taking the Butte Canyon dirt road 10.2 miles beyond Tamarask Grove Campground on Highway 78. Route to campsite then will be marked by orange streamers.

A tour of scenic sites in the Hawk Canyon area will be organized Saturday afternoon for those with four-wheel-drive and other off-road vehicles such as trail bikes and dune buggies.

After Sunday morning breakfast, featuring Dick Bowen's popular pancakes, the group will watch the Borrego 100, which starts at Benson's Dry Lake and can be seen from several good vantage points.

The Hawk Canyon campsite is unimproved and those attending will provide their own water, fires are prohibited but gas stoves and fires built in containers are not. Ray Madden, Loren Bachman, and Bowen will be trip leaders.

Plans for the outing will be discussed at 7:30 tonight (Oct. 15) at the Adventurers' meeting in CRA Clubhouse. Highlighting the meeting will be showing of color slides of Israel by Abe Hurlich.

Trail Bike Club Plans Laguna Ride

CRA's new Trail Bike Club has planned a 10 to 15-mile scenic ride Sunday (Oct. 19) in the northern Laguna Mountains recreation area.

Trail bikers will meet at 9 a.m. at the Pioneer Mail picnic and camp grounds along Sunrise Highway north from Laguna Lodge and the U. S. Air Force station. The ride will be along a loop of U. S. Forest Service road.

Club members and prospective members will see a film and discuss plans for the outing in a meeting at 7 p.m. tomorrow (Oct. 16) in the CRA Clubhouse. Call "Gene" Langworthy, ext. 1223 LF or (home) 276-6516.

'Over Line' Tourney Slated For Weekend

CRA will sponsor an "over the line" tournament Saturday and Sunday, Oct. 25-26.

Deadline for entries is Oct. 23. To enter send the name of the team, the manager's name and extension to Pete Beyrer, Mail Zone 131-70. Managers will be notified of team start times.

Awards will be given to the winning team and if more than 16 teams enter, runner-up awards will also be given.

Tropical Fish Club Schedules Cookout

CRA Tropical Fish Club will hold a wiener roast at 6 p.m. Monday (Oct. 20) at Missile Park.

Pete Beyrer, club commissioner, will be host and cook. Those planning to attend should call Mary or Jerry LaRose, 273-4307.

After the cookout, the club will hear Dr. Leroy N. Phelps, professor of microbiology at San Diego State College, speak on "The Aquarium in Color."

Officers, elected at the last meeting, are Ralph Williams, president; Gerry Breese, vice president; Mary LaRose, secretary; and John Madryga, treasurer.

Volunteers Needed For Packing Gifts

The Viet Nam Gift Pac Committee, a San Diego based nonprofit, nonpartisan operation, needs volunteers to assemble packages for American troops in Southeast Asia.

The group will stage an around-the-clock effort Oct. 17-26 at 108 Reynard Way in South Mission Hills. For information call 291-5791.

Mgt. Club Sponsors Disneyland Party

Convair Management Club, as a salute to San Diego's 200th anniversary, has leased Disneyland the evening of Dec. 13 for a five-hour, Christmas-season party for San Diego residents and General Dynamics families.

Don Evenson, planning committee chairman, said $3.95 admission will cover all attractions and parking for the 8 p.m. to 1 a.m. party. Tickets go on sale next week at employe benefits outlets, the CRA Clubhouse, and ticket agencies in the metropolitan area.

The Management Club's regular (sixth annual) General Dynamics' family night at Disneyland is scheduled April 11, 1970.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD /NEWS is Oct. 21. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS — Meeting tonight, Oct. 15, 7:30 p.m. Borrego 100-mile off-road race, Oct. 18-19, in Hawk Canyon.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Alpine 50-mile ride Oct. 25, 1:30 a.m., meet at Fletcher Parkway Bowl.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting Oct. 19, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meet Tuesdays and Thursdays, 9 a.m.-noon & 7-10 p.m.

CHORUS — Rehearsals Wednesdays, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., Oct. 21, Gillespie Field Clubhouse.

GOLF—Tijuana tournament, Nov. 22-23.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING — GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd., Flat rate fee $1.00 (includes skates).

JUNIOR SCIENCE — Workshop Oct. 17, 7:30 p.m.

MINATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Oct. 26, 9:15 a.m. San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meet Oct. 16, 7:30 p.m.

RIFLE CLUB—Senior shoot Oct. 22, 7 p.m.; junior shoot Oct. 18, 9 a.m; Gillespie Field Range,

ROADRUNNERS—Meet Oct. 23, 7:30 p.m. Gillespie Field Clubhouse.

ROCKHOUNDS—Field trip Oct. 18-19, Fort Irwin in Calico Mountains. Oct. 15, potluck 6:30, meeting 7:30 p.m.

SAILING—Meeting Oct. 22, 7:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SOFTBALL—"Over the line" tournament Oct. 25-26.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting Oct. 23, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TRAIL BIKE—Meeting Oct. 16, 7 p.m. Laguna scenic 15-mile ride, Oct. 19, 9 a.m. at Pioneer Mail picnic & camp grounds.

TROPICAL FISH — Wiener roast at 6 p.m. Oct. 20, CRA Missile Park.

WIVES CLUB—Potluck and craft session Oct. 22, 10 a.m.

Four Earn Berths On Pistol Team

Warren Walker, Don O'Brien, Jim Halfacre, and Charles Kropp will represent CRA Pistol Club in competition during the next quarter.

Results of Sept. 28 club matches are: Masters—O'Brien, 293-14x; Walker, 280-5x; Expert—Leon Thomas, 278-4x; Kropp, 271-2x; 45-cal. Short National—Walker, 251; Kropp, 242; A. E. Kampmann, 241; O'Brien, 175; Sharpshooter — James Thomas, 228-3x; Veronica O'Brien, 218-1x.

Next match is Oct. 26 at 9:15 a.m. at police range.

Bike Club to Pedal 50 Miles to Alpine

The CRA Bicycle Club will go on a 50-mile ride to Alpine beginning at 7:30 a.m. Saturday, Oct. 25.

Riders will meet at the Fletcher Parkway Bowl. Ride leader will be Dick Dege. For information call Dave Lukens, ext. 2881 KM.

Discount Tickets

The following tickets are on sale at employe benefits and all CRA outlets:

San Diego Gulls vs. Portland Bucks ice hockey, Saturday, Oct. 18, $3 seats for $2.25.

San Diego Chargers vs. Oakland Raiders football, Sunday Oct. 26, $6 tickets.

Pepper's Gun Club $4.50 tickets which entitle the holder to one pheasant at the gun club. Tickets are good from Oct. 1-Mar. 1. The club is 10 miles east of Ramona.

Discount coupons for Tuesday night boxing at Bill Miller's Coliseum, 15th and E Street, a $1 saving.

Hours Established For Using Rockhound Shop's Equipment

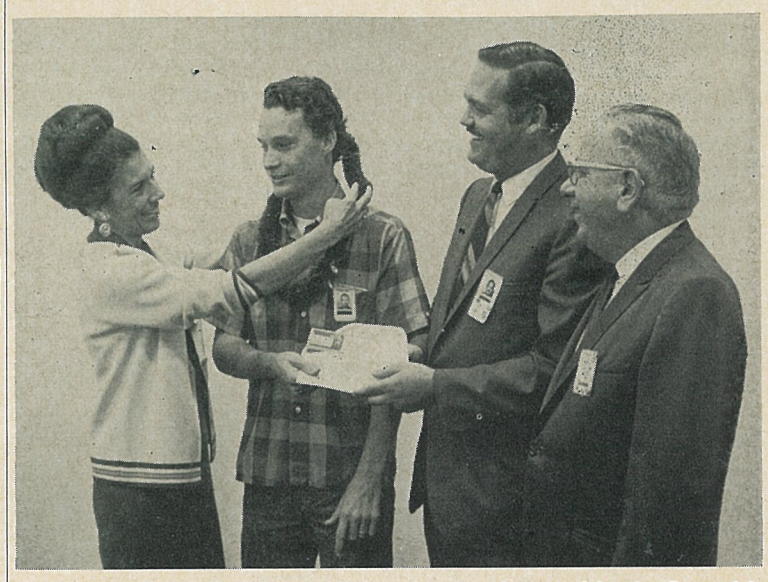
CRA Rockhounds have slated a field trip Oct. 18-19 which will take them to Tin Can Alley in the Calico Mountains and U. S. Army Fort Irwin, both near Barstow.

Members will dig for the gem stone chapinite at the Army base and for agate, palm wood, jasper and onyx at the Calico site.

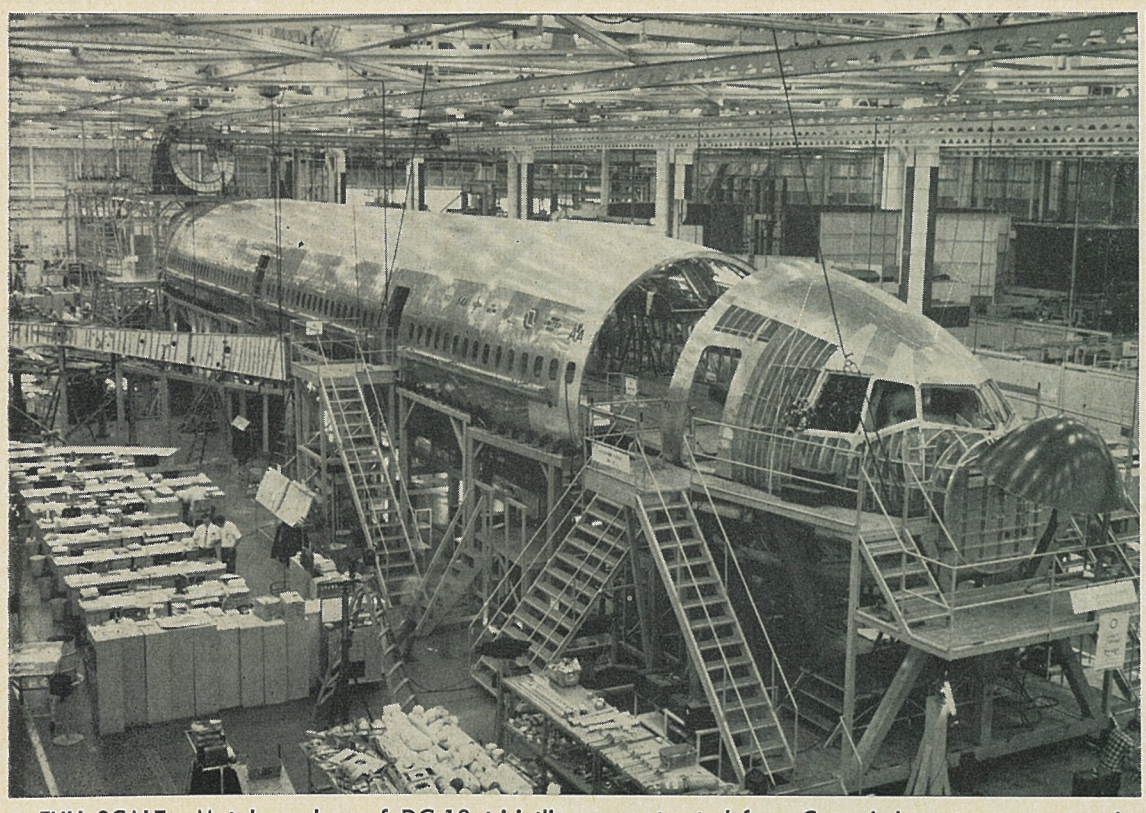
Members are advised to bring water and firewood to the dry camp.

The club's new rockhound workshop continued to be popular. Lapidary equipment is available for members' use. Hours are Mon. Tues. and Thurs. 7-9 p.m. and Wed. 11 a.m.-1 p.m. for retirees, families and second shift employes.

Next regular club meeting is tonight (Oct. 15) at 6:30 p.m. in CRA picnic shelter and includes a potluck supper.



HAWAII-BOUND—Steve Hyder, structural assembler in Convair's Dept. 027 at AF Plant 19, receives tickets for two for eight-day, four-island Hawaii vacation from George Schmiedel, supervisor of recreation, as Dorothy Corrao, steno in Plant 19 industrial relations office, adds traditional lei and Harry Rote, right, F-111 assembly general foreman, looks on. Hyder won trip in drawing at Plant 19 picnic. He and his wife, Diane, leave Saturday.



FULL-SCALE—Metal mockup of DC-10 tri-jetliner, constructed from Convair layouts, nears completion at Douglas Aircraft Co. Long Beach, Calif., plant. Fuselage sections (aft of opening behind nose section) will be produced by Convair division at its Lindbergh Field plant in San Diego.

Airframes Get Bigger and Bigger, Causing Transportation Problems

Representatives from Convair division and seven other firms are members of a task force that is working with state officials to resolve problems on transportation of large and heavy aerospace products over California streets and highways.

The Aerospace Industries Association (AIA) task force was formed last year to help insure that freeway, highway, overpass, and railway construction will not prohibit shipment of major aircraft and space-vehicle assemblies being produced by the aerospace manufacturing firms and their subcontractors.

John C. Ruzich, Convair's general supervisor of shipping and traffic and a member of the AIA task force, said alternate routes are being sought as low-clearance overcrossings on streets and new freeways tend to "encapsulate" the aerospace manufacturing facilities.

Many overcrossings leave only 15½-foot clearance. The Saturn S-II booster, one of the largest loads currently being moved over Southern California roadways, stands 43 feet above the roadbed on its transporter, is more than 80 feet long, and weighs 95,000 pounds.

DC-10 tri-jetliner fuselage sections built by Convair are 20 feet in diameter and must be flown from San Diego to Long Beach in Aero Spacelines' whale-sized Super Guppy cargo plane.

"We're in a new era of aerospace production wherein transportation, more than ever before, is a vital part of our 'production line,'" Ruzich said. "Few companies today could produce a total product like the DC-10 or the Saturn V — both because of facility and financial limitations. Many aerospace products today are 20 times the size and weight of those of 10 years ago."

The AIA task force, in outlining the transportation situation for California officials, said the problem has two basic elements. One is the ever increasing size of aerospace products. The other is that California — perhaps without realizing it — is rapidly and systematically erecting barriers that make it impossible to transport such products over the streets and highways.

Ruzich said the AIA group first called the problem to Gov. Ronald Reagan's attention in a letter last December.

James A. Moe, California director of public works, and John A. Legarra, state highways engineer, have been among state officials arranging and attending a series of meetings with the task force to study and seek solutions to the problem.

Companies represented on the task force, in addition to General Dynamics, include McDonnell Douglas Corp., Lockheed-California Co., Hughes Tool Co., Boeing Co., Rohr Corp., Northrop Corp., and North American Rockwell Corp.

Facilities of the seven firms and their subcontractors for major components are located from Santa Cruz to Sacramento and from Sunnyvale almost to the Mexican border.

FB-111A Ground Equipment Shipped From Rochester

Aerospace Ground Equipment (AGE) for use with the U. S. Air Force FB-111A strategic bomber was shipped this month from Rochester by the Electronics division of General Dynamics.

The computer-controlled AGE systems will be installed at ground maintenance stations to electronically check the airplane's avionics.

The first system will be used at Carswell Air Force Base, Texas, where the first FB-111A is being delivered to the Strategic Air Command.

The shipment to Carswell AFB consisted of the final four units in the first system. Four other units had been shipped earlier. Each unit of complex electronic test gear — 10 feet wide, 6 feet high, and 2 feet deep — weighs about 2,000 pounds.

The Air Force will use AGE to verify the flight readiness of the FB-111A on the ground. Advanced simulation, measurement and computer techniques are combined in the equipment so that the performance can be determined for each avionics subsystem including primary flight instrumentation, mission and traffic control, penetration aids and firepower control. AGE enables a maintenance officer to ensure operational reliability and to identify and correct any malfunctions.

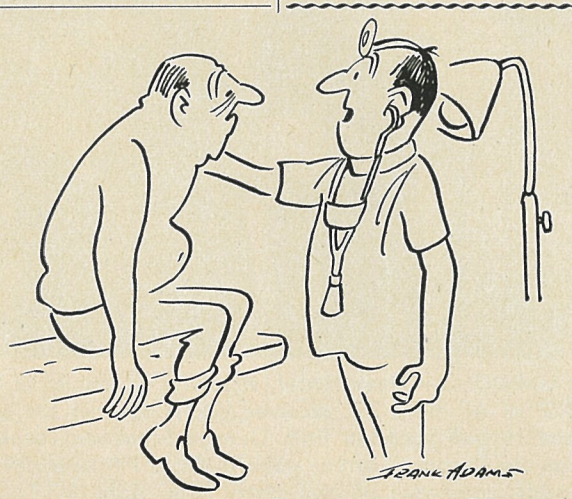
The variable-sweep-wing FB-111A is manufactured at the Fort Worth division of General Dynamics and will be deployed at Pease AFB, N. H., and Plattsburgh AFB, N. Y.

The Electronics division also designed and is manufacturing AGE for the U. S. Air Force F-111A fighter-bomber. The system is designed in modular units so that it is readily adaptable for use with all advanced operational aircraft planned through the 1970s.

Electric Boat Wins Submarine Contract

The Navy has announced award of a $9.1 million cost-plus-incentive-fee contract to General Dynamics to serve as system manager and design, fabricate and provide electronic equipment for submarines.

In making the award, the Naval Ship Systems Command said that the Electric Boat division at Groton will provide the Navy with hardware and related software and services under the contract.



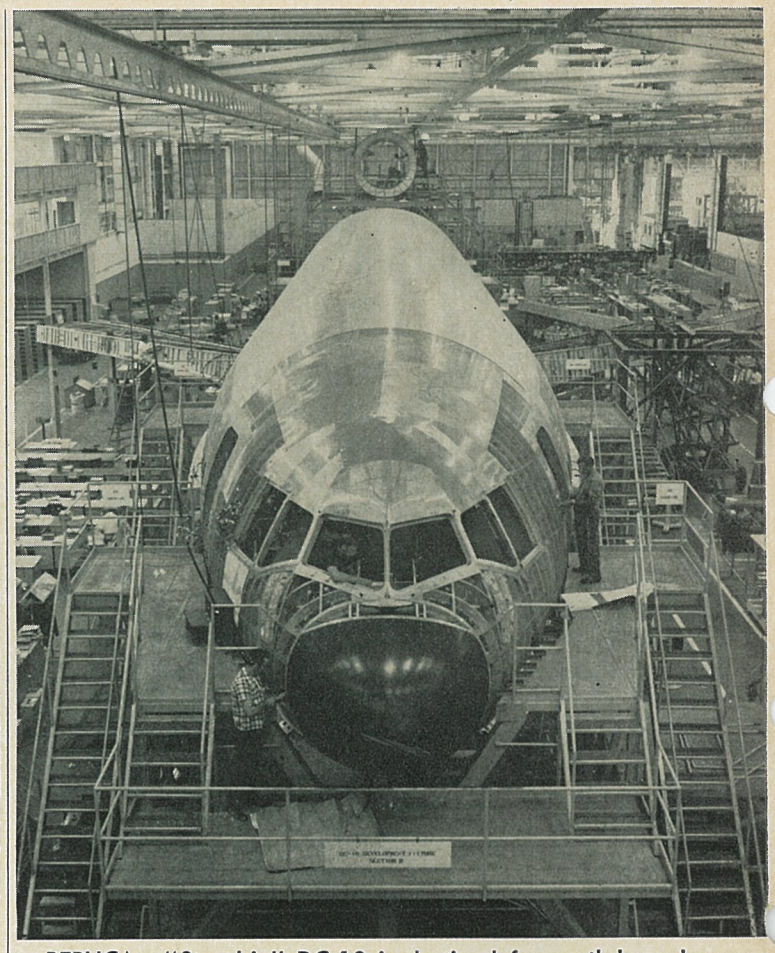
"What exercise do you get *other* than jogging from your bed to the breakfast table?"

Lewis Will Speak To Mgt. Association

Roger Lewis, General Dynamics president, will speak at the November Management Association meeting at Fort Worth.

"Plans are being finalized," said E. W. Holmes, vice president-programs, "and we'll announce details soon."

Engineering department under R. H. Widmer, vice president-research and engineering, will sponsor.



REPLICA—"Stand-in" DC-10 is destined for earth-bound career as tool for transforming engineering design into production know-how. When completed, it will contain miles of electrical wire, hydraulic lines, controls, and other mechanical components which require exact fit.

From Down Deep

Three Convair Men Recover Ancient Cannon From Wreck

Three Convair employes at Vandenberg AFB (Calif.) have recovered a 115-year-old brass cannon from a wrecked steamer off Point Arguello, near Lompoc, Calif.

After three years of exploration and preparation, Harvey Clemens, Dept. 985-1 launch service mechanic, Dick Smith, Dept. 985-1 test conductor, and Andy Anderson, Dept. 985-1 test conductor, recovered the cannon last month from the "Yankee Blade," which went down Oct. 8, 1854.

The ship sank among treacherous rocks and reefs with more than $150,000 in gold aboard—but most of that has been recovered over the years.

Possibility that some gold remains keeps the men from revealing location of the vessel, except to say it lies in more than 70 feet of water. Seas at the site are so rough that diving is possible only a few days a year.

The cannon was on display during the 1853 New York World's Fair and later was mounted on the ship. As a collector's item, it is worth about $5,000.

The ship was en route to Panama from San Francisco during the last days of the California gold rush when the tragedy occurred. It had 1,200 passengers aboard and, although reports vary, the three men believe all but 15 were saved.

The three Convair men have been diving together about five years and go two or three times a month.

They use scuba gear in diving and have investigated several other wrecks in the area, but all those are known to area divers.

The men have been with Convair at Vandenberg more than 10 years and formerly were at Edwards AFB.

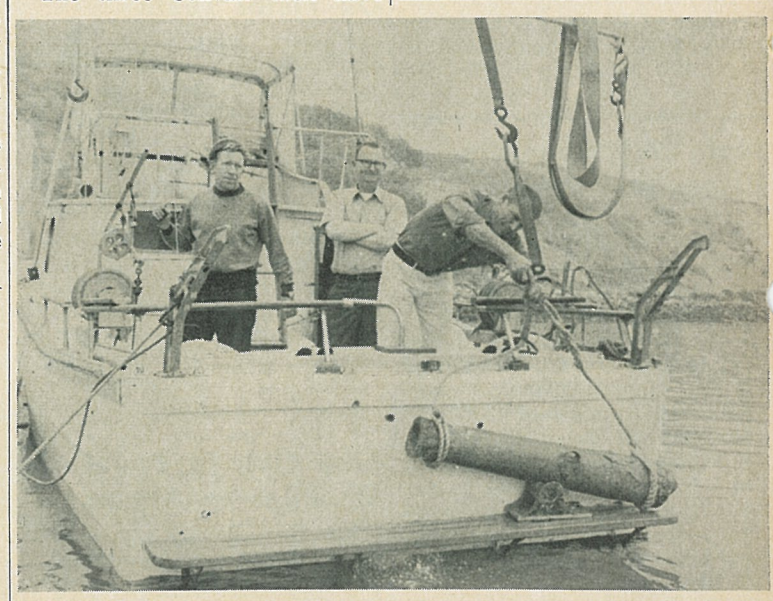
Galaxy Lifts Record Load

An Air Force C-5 Galaxy, world's largest aircraft, lifted off Oct. 1 at Edwards AFB on an engineering test flight with a 410,000-pound payload—heaviest ever carried by an airplane.

Convair division builds empennages (tail sections) for the giant cargo craft at its Lindbergh Field plant in San Diego under subcontract from Lockheed-Georgia.

Total takeoff weight on the record-setting flight, including fuel and payload, was 790,000—an unofficial world's record.

The XC-99, built by Convair and Fort Worth divisions and world's largest land-based cargo plane when it first flew in 1947, was designed to carry 100,000 pounds of cargo and once lifted 104,190 pounds.

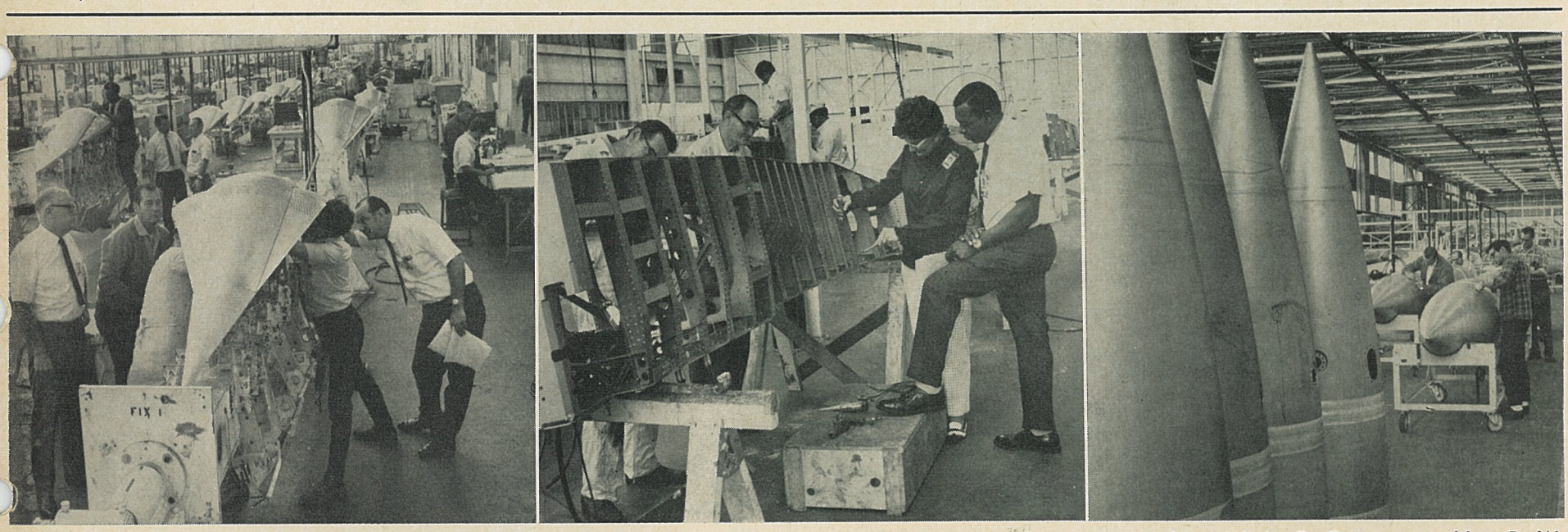


RECOVERY—Preparing to hoise aboard cannon recovered from steamer which sank in 1854 are, from left, Harvey Clemens, Dick Smith, and Andy Anderson, all Convair employes at Vandenberg AFB, Calif.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 21 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 29, 1969



F-111 SUPPORT—Convair's F-111 component support effort, employing nearly 5,000 and producing an average 80,000 lbs. of hardware a month, has become division's largest from manpower standpoint. Photos are all Dept. 027 at Air Force Plant 19 where most production is based. Left photo shows "spike" inlet choke assembly with (from left) Jerry Wilson, structural assembly group foreman; Glenn Boteler, inspector; Lino Peralta, assembler; Wade C. Cropp, assembler; P. W. Byrd, foreman. Center: weapons bay tank effort by (from left) D. E. Koster, assembler; B. B. Davis, assembler; Sunnie Fichas, inspector; Jim Wilkins, tank assembly supervisor. At right is 600-gallon external fuel tank assembly area. Department employs 200 on second shift.

AF Sustained Craftsmanship Performance Award Earned

Convair has been notified that the division will receive the Air Force Sustained Craftsmanship Performance Award.

In a letter to Convair General Manager Jack L. Bowers, General James Ferguson, commander of the Air Force Systems Command, said that the award "is bestowed in recognition of continued craftsmanship performance and achievement beyond the first Craftsmanship Award level."

The first award was the USAF Craftsmanship Award which was presented to Convair early this year (GD/NEWS Feb. 5, 1969).

Only nine other industrial organizations have ever qualified for the Sustained Craftsmanship award. It will be presented at ceremonies at a time and place to be announced.

New NASA Research Facility Tackles Centaur Improvement

Centaur improvement will be the first job of a new NASA Lewis Research Center facility.

The facility is one of two opened this month by NASA Lewis at Plum Brook Station near Sandusky, Ohio, to help develop reliable space electric-power generating systems and chemical rocket systems required for deep-space missions.

Work on Centaur, presently undergoing modifications to incorporate advances made in the 10 years since it was first designed, will be done in the $11.5 million Spacecraft Propulsion Research Facility.

Known as the "B-2" stand at Plum Brook, the new facility is designed to carry out research, development, and validation tests on a wide variety of spacecraft and their propulsion systems.

The facility can produce the vacuum, cryogenic background temperature, and solar heating found in near-earth-orbit for spacecraft and rocket vehicles up to 22 feet in diameter and 50 feet long.

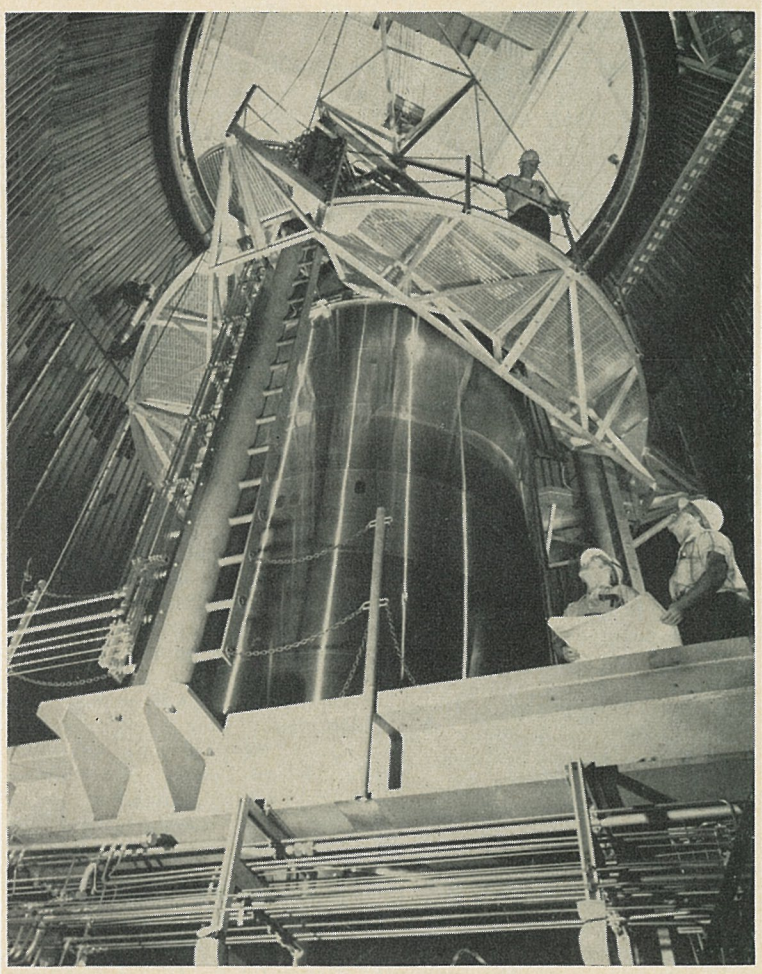
Rocket engines up to 100,000 pounds of thrust, in the case of a liquid hydrogen-liquid oxygen engine, can be fired in the facility under space conditions.

In addition, the spacecraft systems can be subjected to long-term conditions of cold, vacuum, and solar heating prior to firing to simulate the effect of a long coast period.

The Centaur improvement program being carried out in B-2 concerns the tank pressurization and propellant feed system. In the present Centaur, two turbopumps are used to provide the initial push of the propellant to the main engine pumps. The boost pumps are located at the tank outlets and operated with a hydrogen peroxide gas generator.

By increasing strength of the ducting material and efficiency of the main engine pumps, it is expected the boost pumps can be eliminated. This would save about a half million dollars per vehicle and the simplified system can be

(Continued on Page 2)



PROPULSION FACILITY—Engineers prepare an improved Centaur vehicle for development testing in the Spacecraft Propulsion Research Facility at NASA Lewis Research Center's Plum Brook Station. Facility permits actual firing of propulsion system under simulated space environment conditions.

NASA Contract Calls for Study Of Space Fuels

Convair will study pre-launch mission operations for a space storable propellant module under a contract from the NASA Office of Advanced Research and Technology and Jet Propulsion Laboratory.

The contract is part of NASA's Advanced Technology Program concerned with future propulsion systems applicable to unmanned planetary spacecraft.

The study is to determine if there are any new or unique problems which would be introduced at Eastern Test Range (ETR) by using oxygen difluoride and diborane in a propellant module.

Both fuels have highly reactive and toxic natures which

(Continued on Page 5)

F-111 Output Upped To Record Average

Convair's Dept. 027 at Air Force Plant 19 has upped output of F-111 component hardware to a record 80,000 lbs. per month average during the past four months.

Production hit the 97,000 lb. mark in July, the department's most productive month so far, according to Harry Rote, general foreman.

Components are shipped to Fort Worth division for installation.

F-111 component production at Convair is currently the division's largest single effort from a manpower standpoint. Latest figures show nearly 5,000 employes including direct and indirect, or support, personnel.

Convair produces pylons, weapons bay tanks, "spike" inlet chokes, fixed cowls, forward equipment bays, aft duct assemblies, aft center fuselage sections, 600 gallon external fuel tanks and stabilizer booms for the F-111.

Nearly all assembly is accomplished at Plant 19 with the assistance of support departments. Convair's Lindbergh Field plant produces 95 per cent of fabricated parts in Dept. 015, machine shop, and Dept. 001, sheet metal.

Product quality plus meeting production schedules have been stressed during Convair support efforts, according to Rote, and numerous favorable comments have come from Fort Worth in these areas.

Special accolades are due various support departments, says Rote, for ability to react to changes in design or production. He cites one instance where some 50 changes were incorporated and normal production resumed, all during a five-day period.

Convair's support program began in November 1966 and, under present projection, extends through 1970.

In addition to its first shift production and support effort, Dept. 027 maintains a second shift in assembly areas with some 200 employes. Training and familiarization of new employes has been handled at Plant 19 under direction of educational services.

Con-Trib-Club Grants for Year Total $553,474

The Convair Employes' Con-Trib-Club made grants totaling $553,474.56 during the 1968-1969 club year.

Included were: United Community Services, $340,000; American Cancer Society, $10,000; Arthritis Foundation, $4,000; Bayside Settlement House, $175; Boys and Girls Aid Society, $10,000; Boy Scouts of America, $2,750; Boys Clubs of San Diego, $5,334; Boys Club of South Bay, $500; Camperships, $12,195; Cerebral Palsy Foundation, $1,500; Children in Need, $1,000; Children's

(Continued on Page 5)

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Emergency Aid Funds Assist Families When in Dire Need

"Bad luck" may explain misfortune but it doesn't help. However, the Convair Employes' Con-Trib Emergency Aid Fund does!

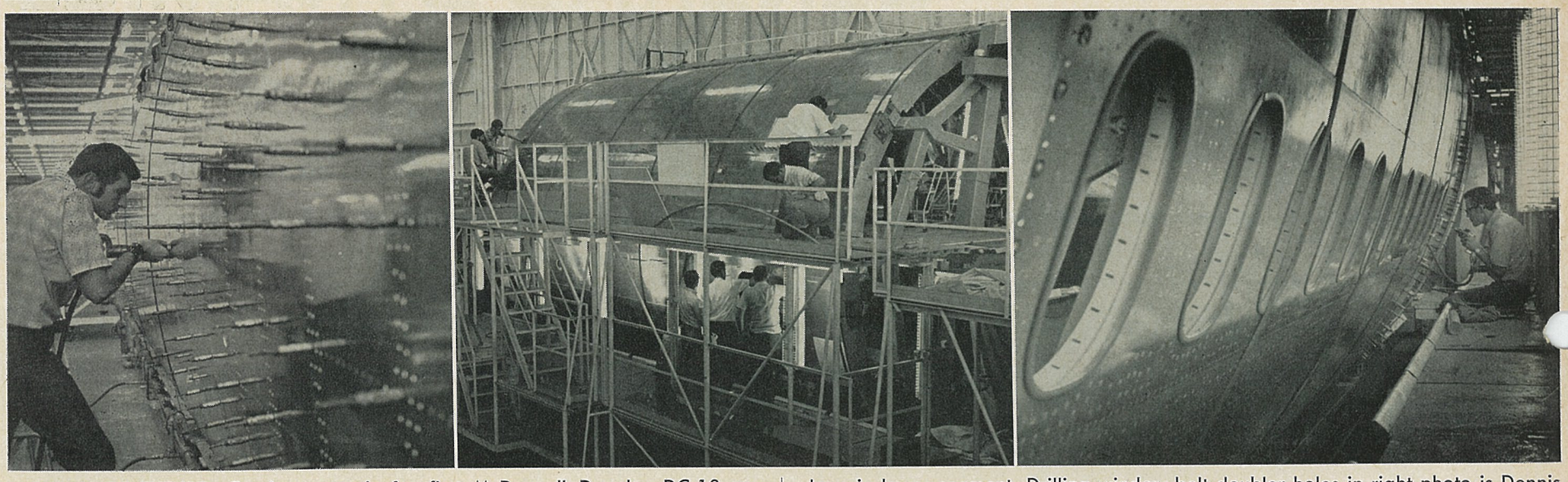
In an emergency, Convair employes and their families may turn to the EAF for financial aid to provide necessities of life, funds for unexpected or heavy medical expenses, and other unusual emergencies.

To the EAF, an emergency is an unexpected event beyond the control of the employe which calls for funds beyond the resources of the family and which are not available from other sources.

According to Paul Allgire, supervisor of employe benefits, to qualify for aid a request must meet four criteria: it must be a real emergency; it must be of a temporary nature; it must fall within the maximum aid allowable; and it must be an emergency within the by-laws of the Con-Trib-Club articles of association.

The articles of association, for example, prohibit aid in cases arising from civil or criminal arrest, from personal over-mortgaging, or in pregnancy cases unless an unexpected complication arises. Under these by-laws, a person could not be heavily in debt through over-spending and have

(Continued on Page 2)



SHAPE OF FUTURE—Fuselage panels for first McDonnell Douglas DC-10 are taking final form at Convair's Lindbergh Field plant. In left photo, Mike Purdy, assembler trainee in DC-10 assembly Dept. 046-0, handles riveting chore. Panels assembled on fixture in center photo are "upside down," with passenger cabin windows in lower segment. Drilling window belt doubler holes in right photo is Dennis G. Jackson, an assembler in Dept. 046-0. Panels for DC-10 fuselage are fabricated both by Convair and Aerfer Industrie Aerospaziali Meridionali in Naples, Italy. Last panels for first DC-10 are due in San Diego this week.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Oct. 15 and Oct. 31.

Thirty-year: Dept. 031, N. W. Merrill; 059, C. R. Powell; 401, H. G. Rexroad.

Twenty-five-year: Dept. 045, P. E. Thomas; 049, P. E. Liggett; 401, J. W. Smith; 460, R. G. Newman; 780, L. K. Thornbrugh.

Twenty-year: Dept. 027, J. A. Gagnon; 130, A. L. Brees; 143, Irene S. Hannibal.

Fifteen-year: Dept. 101, R. Hornibrook; 110, J. R. Bachman; 142, W. A. Dershem; 400, J. L. Ketchum; 452, C. R. Kibbee; 531, J. W. Howarth; 572, V. L. Lintvedt; 744, H. H. Moran; 780, S. J. Gwazdacz.

Ten-year: Dept. 015, O. Kraneis; 046, W. E. Ledyard; 141, R. H. Bell; 143, A. C. Bailor; 144, J. R. Gillmore; 195, Barbara J. Peterson; 250, D. C. Fleisher, O. Jones; 400, Loraine B. Allen; 401, M. DeLeon, S. S. Love, J. E. Prather, R. E. Rothacher; 420, B. D. Snow; 508, J. E. Beard; 519, E. G. Heikkila; 543, D. L. Moss; 545, W. Douma; 589, C. E. Crone; 598, N. Tosaya; 732, J. W. Hart; 780, Kathryn L. Haines, H. E. Laffoon, R. J. Ramsey; 833, W. K. Johnson; 954, D. L. Hodson; 979, L. H. Meyer, W. B. Rauch.

ELECTRONICS

Service emblems due during the month of October.

Thirty-year: Dept. 465, J. R. Graves Jr.

Twenty-five-year: Dept. 611, J. W. Crooks Jr.

Fifteen-year: Dept. 204, C. C. Slaght, 614, E. W. Barrett.

Ten-year: Dept. 424, Lizzie D. Richburg; 616, J. E. Hangartner; 921, J. M. Danielski.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Oct. 10.

Dept. 019, C. S. Bivona, $15; 020, E. Bowers, $130.50; 579, W. D. Bowers, $15; 027, N. J. Brown, $199.50; 027, W. R. Cashman, $15; 027, R. H. Cowan, L. Peralta, $11.50 each (joint award); 027, V. Cruz, $25; 015, M. H. Davidson, $15; 059, V. Dressler, $63.80; 460, H. C. Filskov, $15; 001, P. S. Gastauer, J. E. Pennington, C. E. Scott, $5 each (joint award); 149, C. E. George, $15; 027, E. Haith, $30.30; 001, D. C. Herstedt, $55.

Dept. 756, H. P. Higdon, $35.90; 027, E. L. Holtwick, $92; 001, K. K. Jones, D. C. Herstedt, $7.50 each (joint award); 149, T. S. Knight, $120; 583, M. J. Lanfranco, $634.90; 401, J. F. McConnell, $15; 149, L. C. Menches, $18.60; 780, O. H. Miller Jr., $69.10; 400, W. L. Mills, $35.60; 049, W. C. Pahl, $15; 780, W. R. Pitts, $38.40; 250, B. Scranton, $56.90; 027, F. J. Serio, G. R. Simpson, $44 each (joint award); 401, L. O. Smith Sr., $15; 015, F. J. Stefance, $15; 149, R. D. Travis, $30.80; 027, L. H. Wilson, $55.70; 059, N. I. Yandell, $26.40.

Employe Suggestion awards approved for the week ending Oct. 17.

Dept. 149, E. Angulo, $15; 059, C. F. Avina, R. Rodrigues, $10.10 each (joint award); 401, G. Bruno, E. D. Cordle, $186.05 each (two joint awards); 401, E. D. Cordle, $15; 141, J. R. Crush, G. Gross, $96.95 each (joint award); 001, D. Demers, M. J. Russell, $7.50 each (joint award); 250, B. B. Duck, $15; 831, J. A. Dunleavey, $15; 027, S. D. Engebretson, $22.20; 460, M. Faktor, $25; 460, R. E. Gross, $69.90; 553, D. N. Hawk Jr., $100;

Dept. 019, D. W. Jacobs, J. R. Saxon, $30.55 each (joint award); 027, S. Lepule Jr., $50.20; 810, E. M. Lizarraras Sr., $17.60; 565, E. V. Mansfield, $411.60; 019, B. D. McAfee, $65.90; 149, L. F. McCoy, $30; 027, J. R. Myers, M. C. Tracy, $39.70 each (joint award); 027, L. D. Myers, $49.50; 049, W. C. Pahl, $15; 835, C. W. Scott, $25; 027, F. J. Serio, $100.90 (two awards); 578, D. W. Suttie, $110; 518, G. Tompkins, $95.10; 584, A. B. Walburn, $15; 027, R. L. Wilder, $15; 027, W. B. Williamson, $21.30; 553, E. L. Wolfensberger, $443.80.

Retirements

CONVAIR

GARLAND—Horace C., Dept. 250-4. Seniority date March 26, 1957, retired Sept. 18.

GUZZARDO—Ilene M., Dept. 780-5. Seniority date Aug. 6, 1956, retired April 25.

LEVINSON—Sidney A., Dept. 142-0. Seniority date April 16, 1956, retired Sept. 20.

ROGERS—Alfred B., Dept. 250-2. Seniority date July 20, 1962, retired Sept. 8.

Rider-Driver

CONVAIR

RIDE WANTED—From Morena Blvd., below Bay Park to Lindbergh Field plant, 7:30 a.m. to 4:15 p.m. shift. Phone Maggie, ext. 1277 LF.

RIDE WANTED—From Ocean Beach near Point Loma Ave. to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call Julie, ext. 2021 LF or (home) 223-8764.

Personals

CONVAIR

We wish to thank all our friends at Convair for their sympathy and kindness upon the recent death of our son, Paul Robert Giard. Your thoughtfulness was deeply appreciated.

Paul and Yvonne Giard and family.

* * *

The E. T. Nuss family wish to express their appreciation for the expressions of sympathy sent at the bereavement of their beloved husband and father.

* * *

The family of Ken Vesock, Dept. 401, send their sincerest thanks for the lovely flowers and cancer donation upon the death of his mother, Catherine A. Hansen

Deaths

CONVAIR

ALLAN—Helen K., retired April 9, 1965, Dept. 171, died Oct. 9. Survived by her daughter, Lorraine Jorp.

BIRCH—Clarence E., Dept. 834-2, died Oct. 7. Survivors include his wife, Aileen, and sons, Gregory and Glen.

BOARD—Jack W., Dept. 031, died Oct. 10. Survivors include his wife, Kate and sons, Larry and Randy.

DICKIE—David F., retired Nov. 30, 1963, Dept. 25-5, died Sept. 20. Survived by his sister, Helen.

GALL—William A., Dept. 420-4, died, Oct. 4. Survivors include his wife, Frances, daughter, Janice Wakefield and son, Bruce.

HUGHES—Maryan P., Dept. 565-3, died Oct. 14. Survived by her husband, Tom, sons, James Moore and Howard, daughters Jacqueline Daly and Helen Schubert.

INTERLANDI—Sebi B., Dept. 400-3, died Oct. 14. Survivors include his wife, Mary.

SCHULTE—Raymond J., Dept. 514-0, died Oct. 14. Survived by his wife, Barbara, son, Robert, daughter, Kathleen.

TOON—William T., Dept. 250-3, died Oct. 20. Survivors include his wife, Ara (Dept. 518-0), sons, Tom and William.

Births

CONVAIR

PERDUE—Daughter, Caralea Susann, born Aug. 22 to Mr. and Mrs. Charles Perdue.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

More Panels Leave Italy

Last panels fabricated for the first DC-10 tri-jetliner by Aerfer Industrie Aerospaziali Meridionali in Naples, Italy, under Convair subcontract are due in San Diego this week.

The 11-panel shipment, including four panels for DC-10 No. 2, crossed the Atlantic in crates on the deck of the tourist liner Michaelangelo and are being trucked from New York to San Diego.

Since crates used were larger than in previous shipments, C and H Trucking Co. of Hyattsville, N. J., obtained 20 special wide-load permits from states, counties, and cities for the cross-country shipment.

Fred Jennings, east coast field liaison representative for Convair's Dept. 810-1 in Rutherford, N. J., handled arrangements with New York dock authorities for a floating crane to remove the crates from the liner and for their loading aboard trucks for the trip west.

Each of the DC-10 panel shipments from Italy has been loaded and leaving New York within four hours after docking.

Final U. S. Customs inspection has been accomplished in Paramount, Calif., to avoid delays in Los Angeles.

In keeping with Italian custom, Convair employes at Aerfer have joined in a champagne toast to success of the DC-10 program following each of the first-article DC-10 panel shipments.

Jack Hurt, Convair DC-10 program manager, learned of the custom Sept. 18 while in Naples for a program review with Aerfer officials and volunteered to "buy the bubbly" that was used to commemorate last shipment of the first ship-set Oct. 13.

Eight additional Aerfer-fabricated panels for the second DC-10 were shipped from Naples last Thursday on the luxury liner Raffaello. Another shipment of nine panels in the second ship-set is scheduled Nov. 3.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Why can't we accumulate vacation time?

A—Accumulation generally is discouraged, and the reasoning behind the limitation is that the Company believes every employe should have some vacation time yearly. However, current policy allows an employe with five or more years seniority to defer one or two weeks of vacation once between the fifth and ninth year of continuous service so the employe may take three or four consecutive weeks during the next year of eligibility.

An employe with 10 or more years seniority may defer one week of vacation once after the tenth year of continuous service so he may take four consecutive weeks during the next year of eligibility.

Vacations are not cumulative and must be completed within the 12 months following the vacation eligibility date unless they are deferred in accordance with Personnel Administration Manual 4-5 or 4-6.

★ ★ ★

Q—There has been talk this year about an Open House. What's the story?

A—It's in final planning stages. In conjunction with San Diego's 200th anniversary celebration, Convair will hold a product display early in December at the Lindbergh Field plant for employes, families, and the community. Details will be forthcoming later.

★ ★ ★

Q—If a person leaves his and General Dynamics' contributions to the Savings and Stock Investment Plan until his retirement, the tax can be considerable the year he retires. Is there provision, other than earlier annual withdrawals, to alleviate this? If not, is thought being given to providing annuity or installment payments instead of lump-sum cash and stock at retirement?

A—Corporate Headquarters is reviewing several recommendations, including those you mention. Any changes in the Plan must be approved by the Internal Revenue Service before they may be implemented.

★ ★ ★

Q—Why are employes not told before Friday that they must work on a Saturday or Sunday?

A—Employes needed for Saturday or Sunday work are advised by supervision as much in advance as possible. There may be times, however, when supervision is not aware of weekend work requirements until Friday.

New NASA Research Facility Tackles Centaur Improvement

(Continued from Page 1)

expected to have higher reliability.

In the pressurization area, the present Centaur uses gaseous helium to pressurize the propellant tanks during flight. A method to use gaseous hydrogen during engine operation to pressurize the fuel tank is being studied. This would reduce the amount of helium needed and, consequently, the size of heavy helium pressure vessels that must be carried.

The other new research activity, the $28.4 million Space Power Facility will be used in tests of a Brayton Cycle Power System, designed to produce electric power for space missions, and in shroud ejection tests for Project Viking.

Viking, NASA's mission to orbit and land an unmanned spacecraft on Mars, will be flown with a Titan III-improved Centaur launch vehicle.

The heart of the Space Power Facility is the largest high-vacuum chamber ever built, 100 feet in diameter and 120 feet high.

Advanced propulsion and space power systems, including full-scale spacecraft and systems with nuclear heat sources, may be tested in the facility's simulated space environment.

Cold walls and solar simulation make it possible to duplicate conditions a spacecraft will face on a mission with the exception of zero gravity.

In working on the shroud ejection tests for Project Viking, the SPF will be used to simulate thermal and vacuum environmental conditions through launch to the time the shroud is ejected.

Emergency Aid Funds Assist Families When in Dire Need

(Continued from Page 1)

the EAF pay his bills.

One example of an allowable aid case was when Christy Townend, daughter of Donna Townend of Dept. 954-1, was sent to Mayo Clinic for open-heart surgery. Funds provided by the EAF covered transportation and living expenses.

The case is unique in that it was the only one in which the recepient of EAF money was identified. This was because Christy later became the 1967 San Diego County Heart Association poster girl and her mother agreed to reveal the role of the EAF in the girl's surgery and recovery.

Christy now attends school like any other young girl and leads a normal, active life.

Money for the EAF comes from the Con-Trib funds donated by members. Ten per cent of whatever is collected goes into the EAF.

During the past year, from October 1968 through September 1969, the Con-Trib-Club committee processed 263 requests and granted $55,294.56 in aid. Average amount per case was about $200.

Aid for medical expenses over insurance coverage is the most usual request. During the 12 months ending in September, more than $25,000 was spent on such medical costs. An additional $20,000 was spent on living expenses with the remainder for clothing, furniture, funeral expenses, child care, and miscellaneous items.

Checks are always made payable to a store, doctor, insurance company, or individual to whom the recipient is in debt.

Personnel in employe benefits offices can advise and counsel employes regarding Emergency Aid. Nancy Watson at Kearny Mesa, Lou Braun at Lindbergh Field, and Mike Clark at Plant 19 are the people to see—in an emergency.

National Airlines Places Orders, Options for 17 DC-10 Jetliners

National Airlines has ordered nine McDonnell Douglas DC-10 tri-jetliners and placed options for eight others at a cost, including spare parts, of about $280 million.

Convair division will build the wide-bodied fuselages for the three-engine Series 10 liners at its Lindbergh Field plant under contract from McDonnell Douglas.

J. B. Hurt, Convair DC-10 program manager, said the National Airlines order brought total number of firm orders and options for DC-10s to 201.

National's DC-10s will carry 268 passengers at a range up to 3,500 miles and at speeds in excess of 600 miles-an-hour.

Delivery will begin in November, 1971, and extend through December, 1973. The DC-10s will operate over routes now served by DC-8s, with initial service on Miami-New York and New York-Los Angeles routes.

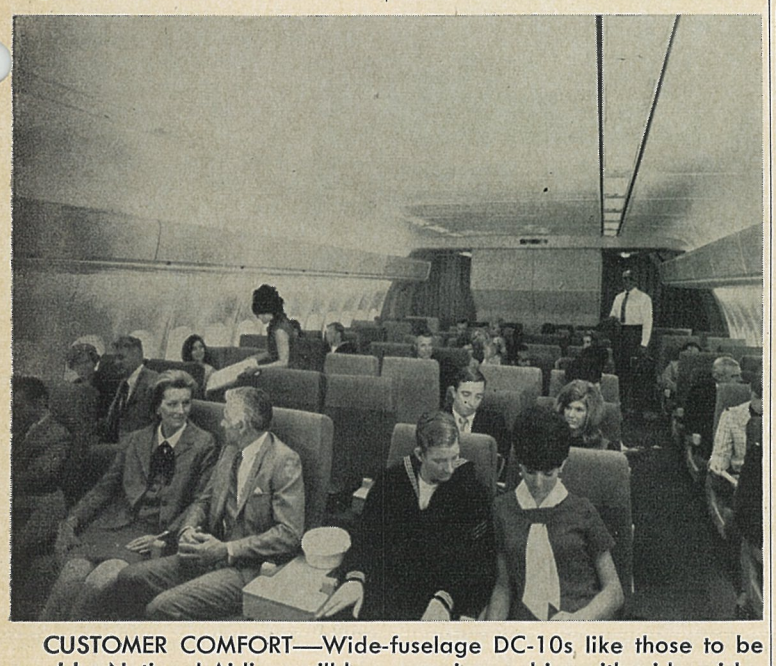
The National DC-10s will be powered by General Electric CF6 engines, each with takeoff thrust of 40,000 pounds — more than twice that of engines on current jet airliners.

L. B. Maytag, National Airlines president, said National's new DC-10 fleet, replacing current DC-8s, will provide pasengers with "the ultimate in spacious, luxurious air travel for many years to come."

Maytag said two separate National teams spent almost a year evaluating competing advanced-technology jetliner designs before selecting the DC-10. He described it as "probably the most thoroughly researched and carefully studied aircraft in airline history."

Maintenance on National's DC-10s will be performed at its base in Miami. A $17 million hangar complex to accommodate its DC-10s and 747s will be completed in 1972.

Other airlines that already have ordered DC-10s include American, KLM, Northwest, Overseas National, SAS, Swissair, Trans International, United, and UTA.



CUSTOMER COMFORT—Wide-fuselage DC-10s like those to be used by National Airlines will have spacious cabins with wider aisles and seats than in present jetliners. No passenger will be more than one seat from aisle. Interior decor will be custom-designed for each airline.

Merit Scholarship Test Deadline Nears for GD High School Jrs.

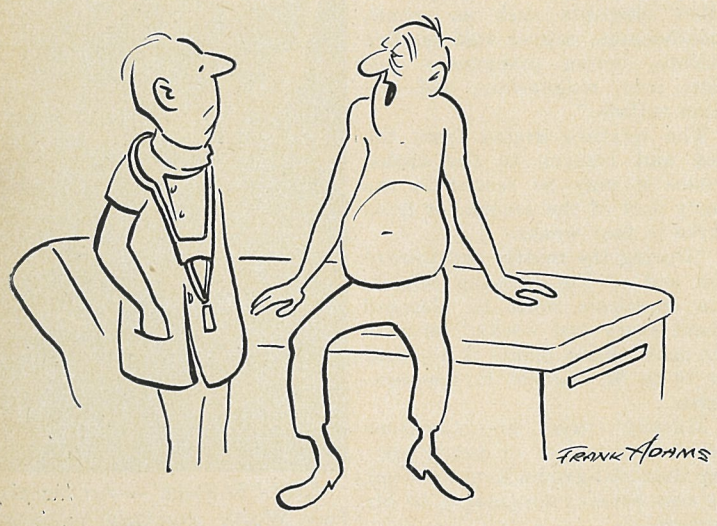
Sons and daughters of Pomona division employes who are high school juniors and wish to be considered for General Dynamics Merit Scholarships must take the first step toward qualification before the year-end holidays.

A student who expects to graduate in 1971 should act now to obtain an application through the high school counseling office. Applications are not available from General Dynamics. Those who apply before the year-end holidays will be permitted to take the National Merit Scholarship "Qualifying Test" in February. Local high schools usually establish the application deadline near the end of the year.

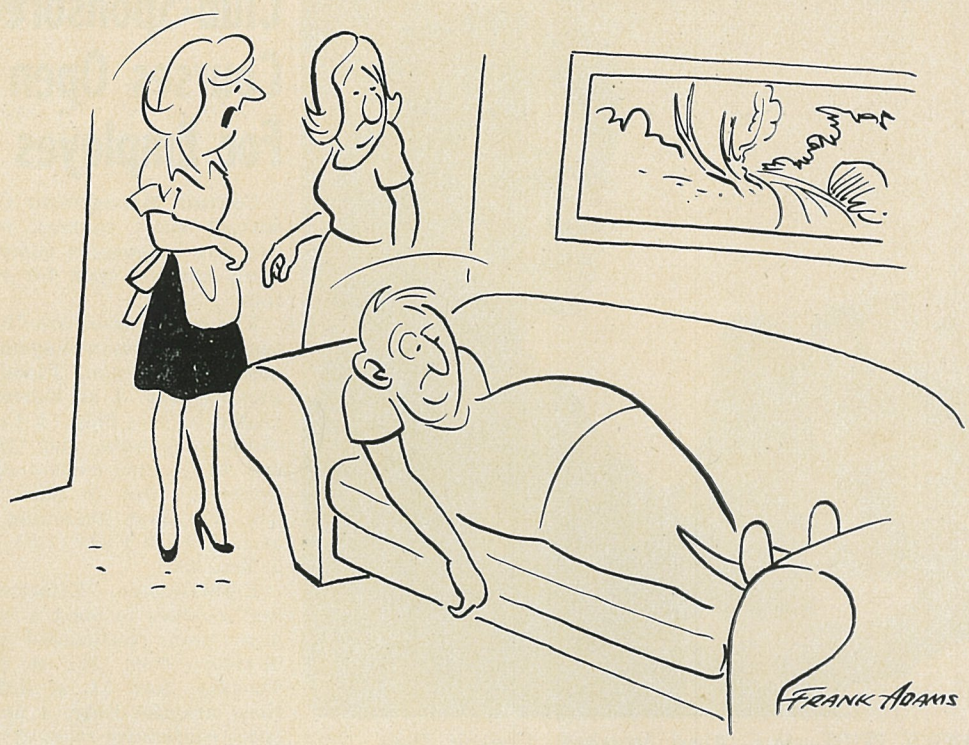
Schools forward names of applicants to the National Merit Scholarship organization during January. Tests are given only to those registered in this way. At most schools the student pays a $1.50 candidate fee to offset costs of administering tests.

All natural and legally adopted children of regular General Dynamics employes are eligible to compete for the scholarships. Employes must have completed at least two years of continuous company service by end of the calendar year prior to award of the scholarships. Children of retired or deceased employes also are eligible.

Each Merit Scholarship is a four-year award and the amount is determined by family financial circumstances and the actual cost of attending the college or university.



"But doc, beer's loaded with vitamins . . ."



"I'll tell you when he goes to work . . . he goes to work at breakfast . . . at lunch . . . at dinner time . . ."

Beware of Crash Diets and Fads; Balance Is Key to Healthy Eating

(Following is one of a series of health articles authored by General Dynamics physicians under Corporate Headquarters sponsorship.)

By DR. G. M. CLARKE*
Medical director, Convair division

The subject of diet and diet fads is a rather delicate one. Everyone seems to have his own ideas based on his childhood environment, on ideas gathered through the years, on newspaper and magazine advertisements and articles, and in some instances on religious beliefs.

The intake of food on which the body must function and stay healthy is completely under the control of the individual. This is more or less unique among body functions. Thus, the type and quantity of food varies widely through lack of knowledge and misinformation. Fortunately, the body, mainly the liver, is able to synthesize the proper balance of protein, fat and carbohydrates out of what is eaten.

As examples of this, certain primitive peoples in Africa subsist on roots, locusts and ants. The Eskimos in past times could sustain themselves while living almost entirely on walrus fat. I once had a patient who subsisted on balls of cheese wrapped in raw cabbage leaves and who would argue strongly about the wonderfully healthful and disease free life he enjoyed because of this diet!

It is this remarkable ability of the body to adapt that has enabled the human race to survive during primitive times. To this day, however, in certain parts of the world "hidden hunger" exists. There is also out-and-out starvation. There are wide areas where nutrition is very poor due to tribal and regional eating habits and a poor supply of an adequate range of foods.

Optimum nutrition is one of the primary factors in maintaining good health and this depends on an adequate intake of all necessary nutrients as well as the avoidance of excesses.

There are 50 different nutrients catalogued at present—vitamins, minerals, amino acids, fatty acids, sugar, etc., but it isn't necessary to be familiar with all that is known about each of them. The balanced diet recommended by nutritionists and highly skilled and trained researchers provides an easily followed pattern for adequate intake of all the nutrients identified so far.

It is only necessary to select foods from each of the four basic food groups for each meal every day in order to obtain the protein needed for growth and repair of body tissue, vitamins and minerals to keep the body functioning properly, and fat and carbohydrates for energy. The four basic food groups are: the meat groups, including fish, poultry, eggs; the milk group; fruit and vegetable group; the bread and cereals group.

At least two servings from the meat group each day, milk which may be in the form of cheese, ice cream or cream soup, four or more servings from the fruit vegetable group, and four or more servings of bread or cereals provide a basic diet pattern which applies to everyone.

Only the amount of food eaten needs to be tailored to each individual. This means small servings for smaller or less active persons and larger portions or seconds for active teenagers and men in physically strenuous jobs.

The public should be protected from food quacks who attribute unusual health and healing claims to "natural foods" grown in organically fertilized soil or sea salts or kelp while they belittle the nutritive qualities of the wholesome foods we buy in our grocery stores. The quaint notions they advocate are expensive to the pocketbooks of those who embrace them and inculcate suspicions of modern technology which are wholly without foundation.

Even more dangerous are the lecturers and nutrition commentators who upset people with extravagant claims for health foods unfounded in fact, for specific nutrients such as Vitamin C as a cure for colds, and Vitamin E for the heart and for fertility.

A study appearing in the Journal of the American Dietetic Association lists examples of the foods that are consumed in large amounts by food faddists: self-prescribed vitamins (an "overdose" of certain vitamins can be harmful and produce certain untoward conditions, such as skin rash); iron tonics; wheat germ; yogurt; molasses; honey; brewers yeast; safflower oil capsules; organically grown vegetables and fruits; special health food; refined and processed special foods.

Research into this problem indicated these people embark on programs of eating health foods motivated by the following: friend's suggestion, the individual's own decision, magazine or newspaper advertisements and articles, radio and TV, and salesmen in health food stores. Misinformation was present in all areas of health foods and nutrition encompassed in this study. Invalid opinions regarding special health foods, chemical fertilizers and insecticides predominated.

This is not to indicate that the foods and preparations listed are harmful — with the exception of vitamin overdosage — but rather to point out that they add essentially nothing to a proper well balanced diet.

Most dieting done today is in connection with attempts at weight loss. Many special reducing diets, so-called "crash" diets, diets involving only certain foods such as bananas-only diets, meat-only, etc. are prevalent. These diets are not acceptable.

The best way to lose weight is under a doctor's supervision.

Pills and capsules abound to make weight loss easier for the individual by reducing appetite. These serve as a crutch for the will power, but these medicines are not desirable because of side effects which include elevation of blood pressure, nervousness and insomnia.

Those who attempt to lose weight on their own should remember these basic principles:

Eat a well balanced diet. (Your body needs balance to function properly whether you are reducing or not.) Any reducing diet should include the four basic food groups listed.

Drink only small quantities of water with meals.

Meat and fish should be boiled, baked or broiled, never sauteed or fried.

Vegetables can be canned, frozen or fresh.

Fruits may be canned, frozen or fresh.

Use low calorie salad dressings, such as lemon or vinegar.

Be patient — a good rate of weight loss is between one half and one and one half pounds each week.

Remember — it is the calories over and above what you need to maintain your body that are stored by the body as fat.

Keep in mind that normal body weight is the result of a way of living. Special "crash diets" are at best temporary.

Those interested may send me a letter containing a stamped, self-addressed envelope and I shall send you a standard, well tested and approved reducing diet that is easy to follow, featuring a well balanced routine that is liberal in the amount of food permitted.

Send your letter to G. M. Clarke, MD, medical director, Convair division of General Dynamics, Mail Zone 130-20, P.O. Box 1128, San Diego, Calif. 92112. (Those at Convair may obtain copies of the diet at Bldg. 1, Kearny Mesa plant, Bldg. 15 at Lindbergh Field plant, or first aid station, Bldg. 4, Plant 19.)

*Dr. Clarke received his medical degree from Loma Linda (Calif.) University in 1939 and holds a master's degree in public health and industrial medicine, Yale University, 1942. He was medical director for N. Y. Shipbuilding Corp., Camden, N.J. 1942-1946 and engaged in private practice in San Diego 1947-1957 at which time he joined Convair division.



MOTHER'S PRIDE—Mrs. Alma Marshall, Convair Dept. 250, admires photograph of son Don (at left) who is co-star of popular TV science fiction series "Land of the Giants."

Proud Parent

Dutiful Son Visits Mother Every Week as TV Co-Star

Alma Marshall's son, Don, spends part of every Sunday evening in her living room where she watches him perform for thousands of TV viewers.

He "comes home" via the science fiction TV series "Land of the Giants" in which he co-stars.

Mrs. Marshall, Convair Dept. 250-6, with 25 years of service, recalls that the road to success for Don was not an easy one.

"Don wanted to be a medical doctor or a dentist, but there simply wasn't enough money."

After a stint in the Army and attendance at Los Angeles and San Diego City Colleges, he determined upon an acting career and studied under Robert Gist of the Beverly Playhouse and Richard Boone of "Have Gun, Will Travel" fame. However, parts were hard to come by and at one point he was down to a five cent piece. Too proud to ask his mother for help, Don stuck it out and his "break" came when the producer of the movie "The Interns" saw him on stage at Pasadena and offered him a small part. More followed, climaxed by his role in "Giants." The series is now in its second year.

Squired by her son, Mrs. Marshall has toured Hollywood studios "behind the scenes" and also visited Las Vegas.

But Don isn't the only star in the Marshall family. There are daughters Ernestine and Marceline and Don's twin brother, Doug.

"They've made me a grandmother ten times!"

EWI Officers Get Varied Assignments

Major Emil M. Kuebler, USAF, one of the Air Force Education-with-Industry officers now at Convair (**GD/NEWS Sept. 17**), has been promoted to lieutenant colonel. The promotion was effective Oct. 1.

Since arriving at Convair, Kuebler and the other officers, Major Marvin G. Spallina and Capt. James W. Sullivan, have undergone three weeks of general indoctrination, attended the Air Force Institute of Technology symposium at Newport Beach and spent one week each in the departments of J. D. Milling, finance; L. I. Medlock, reliability control; E. R. Peterson, engineering; J. H. Mason, communication and are now working with H. E. Moose's department, material.

Wives Club Slates Trip to Hollywood

The Convair Wives Club will take a Hollywood bus trip Wednesday, Nov. 5.

The trip will include stops at the Golden Bull in El Toro, Knott's Berry Farm, Moscatells (hobby and craft center), Van de Camps restaurant and the Truth or Consequences TV show.

Cost of the trip will be $5. The bus will leave CRA Clubhouse at 9 a.m. For tickets call Mrs. H. David Fyffe, 273-4509 or Mrs. Henry Hudson, 278-0521. Mrs. Lewis Chapman is chairman.

Mgt. Club Schedules New-Member Meeting

Convair Management Club will have a new-member indoctrination meeting Wednesday, Nov. 5, in the Bronze Room, La Mesa.

A social hour is scheduled at 5:30 p.m., dinner at 6:30., and the program at 7:30. Price of the dinner will be $3.50.

Mgt.Club Selling Pro Ball Tickets

The Convair Management Club has received a block of tickets for the San Diego Chargers vs. Buffalo Bills football game, Sunday Dec. 14.

Tickets are on sale for $6 from club boosters. Proceeds go to the scholarship fund.

Mgt. Association at Vandenberg Earns First Place NMA Awards

The Convair Vandenberg Management Association at Vandenberg AFB was awarded two National Management Association first place awards Oct. 22 at the NMA annual convention in Birmingham, Ala.

They were for outstanding club in Group 5 and for management improvement.

Club officers for the year for which the awards were given were:

Denny Barber, president; Marv Tooley, executive vice-president; Sam Botta, administrative vice president; Glenn Berg, recording secretary; Jim Wells, financial secretary; Marv Johansen, treasurer.

Ray Schmidt, awards chairman; Harry Kamman, program chairman; Ray Cameron, management development chairman; Jim Gardner, booster chairman; Vance Newcomb, historian; Earl Dismukes, scholarship chairman; Art Sanger, ways and means chairman; Bob Westfall, public relations chairman; and John Sekishiro, publications chairman.

Club-Sponsored Courses Open For Employes

Convair Management Club has several short courses, including two new six-session computer-related courses, open for registration.

The new courses are "Introduction to business management," to meet 5 to 7 p.m. Tuesdays beginning Nov. 4 at Kearny Mesa (KM) in the Bldg. 4 Col. K-10 conference room, and "Introduction to process control computer systems," also to meet 5 to 7 p.m. Tuesdays beginning Nov. 4 at Lindbergh Field (LF) in Bldg. 5, Rm. 338.

Eight-session "Effective writing" courses to meet 5 to 7 p.m. have been rescheduled to start Monday, Nov. 10, at LF and Tuesday, Nov. 11, at KM. Locations are the Bldg. 4 space sciences conference room at KM and Bldg. 5, Rm. 338, at LF.

"Presentation workshop," a two-session course on how to make effective presentations, will meet 7 to 9 p.m. Tuesdays, Nov. 11 and Nov. 18, in the Bldg. 2 presentation room at KM.

Five five-session "Effective communication" courses are open —two at KM and three at LF. Sections at KM will meet 4:30 to 5:30 p.m. beginning Nov. 10 in the Bldg. 26 chart room and Nov. 18 in Bldg. 17, Rm. 2. Sections at LF will meet 4 to 5 p.m. beginning Nov. 12, 2 to 3 p.m. beginning Nov. 13, and 4 to 5 p.m. beginning Nov. 13 — all in the Bldg. 14 auditorium.

A six-session "Introduction to scientific computer systems" course will meet 5 to 7 p.m. Mondays beginning Nov. 3 in the Bldg. 26 chart room at KM.

Registration for each of the courses can be made by calling Helen Cook at the Management Club office, ext. 3146 KM.

Vendor Honored For Craftsmanship

An Italian subcontractor has received an unprecedented recognition from Convair division in the form of a Craftsmanship Achievement banner.

Presenting the banner to Aerfer Industrie Aerospaziali Meridionali, producers of above-floor-level skin panels for Convair's DC-10 program, was Will C. Buxton, purchasing agent. Aerfer President Oscar Cinquegrani accepted the award on behalf of employes at his company's Pomigliano d'Arco plant near Naples.

In an accompanying citation, Buxton stated, "There have been many problems that have required the ingenuity of people in both our organizations. You (Aerfer employes) have risen to the challenge and Convair is proud to be associated with you."

May Dean Schell's 71 Leads Golfers

May Dean Schell shot a net 71 to win flight A of a General Dynamics women's golf tournament Oct. 11 at Coronado golf course. Second place went to Ilene Wilson with a net 75.

Sweeping flight B were Dorothy Johnson, net 82, and Agnes Sliger, net 85.

The distaff golf club's next tournament is slated for 9 a.m. Nov. 8 at the River Valley course.

QC Society Hears 'Consumer' Talk

John Weatherwax, laboratory director for the Los Angeles office of the Federal Drug Administration, spoke to the San Diego Section of the American Society for Quality Control on "Consumer Protection under the Food, Drug, and Cosmetic Act," at its recent meeting.

The meeting was sponsored by Electronics-SD with R. H. Nicholson, manager of quality control, as host.

Strain Gauges for Flight Tests Being Installed on DC-10 Panels

A group of McDonnell Douglas instrumentation specialists have been assigned duties at Convair's Lindbergh Field plant through mid-February to install hundreds of electronic strain gauges on fuselage sections for use during flight tests of the first two DC-10 tri-jetliners.

In addition to 500 strain-gauge channels for fuselage barrel sections, each containing four ⅛-inch-square gauges, hundreds of the electronic gauges will be installed in fatigue-article sections that will be subjected to extensive laboratory bending, loading, and other fatigue-test procedures.



SENSOR — Paul Dominguez, McDonnell Douglas electronics technician, completes strain-gauge hookup on panel for first flight-test DC-10 at Convair's Lindbergh Field plant.

E. D. Strong is supervisor of operations for the McDonnell Douglas group, E. B. Smith is quality assurance inspector, and Chris G. Blanas is personnel supervisor.

Twenty electronic technicians will be assigned to the group at its peak next month. First members of the group reported to Convair for first-shift work Sept. 29 and a second shift was instituted Oct. 20.

The group's office is on the mezzanine at the north end of Bldg. 3 at LF and its phone extension is 2245.

First of the strain-gauge installations was completed Oct. 3 on section D of the first DC-10 fuselage, a panel fabricated under Convair subcontract by Industrie Aerospaziali Meridionali in Naples, Italy.

Strain-gauge channels on the first two DC-10s will be used to verify design criteria during several months of flight testing prior to FAA certification. Effects of cabin pressurization and of stress on different structures during takeoff, cruise, and landing will be measured.

The little electronic strain gauges will be cemented to fuselage barrel section skins, longerons, frames, and floor beams with an epoxy-type cement and, after being cured under 200-degree heat lamps, will become an integral part of the metal surface. The four gauges in each channel will be sealed for moisture protection.

When connected to recorders and activated, the gauges permit extremely sensitive measurement of movement within the metal from tension, stress, and strain.

Movement of the metal affects length of tiny wires within the gauges and alters electrical resistance in the channel. The result is read in "engineering numbers" on the recorders.

"We will complete installations on as many panels as possible before they are mated with others on the barrel fixtures," Strong said. "Some must be attached after panels are joined — and we are working closely with production departments on scheduling."

Smith said many tedious hours of work are required to complete each installation and care should be taken to see they are not damaged. Yellow and black warning stickers will be placed near each of the installations.

Work being accomplished by the group at Convair is under the overall direction of J. C. Londelius, vice president-flight and laboratory development; W. G. Mikkelsen, manager of field and laboratory operations; and W. E. Bachand, manager of DC-10 flight programs.

All Automatic

Back Yard 'Farmer' Produces Tomatoes in Chemical Plot

As a youngster, Art Murphy's hobby was to grow tomatoes on his family's farm in Utah.

The Fort Worth structural engineer enjoys the same hobby today, he's doing it the "easy way." He grows tomatoes hydroponically or chemically right in his own back yard.

His "farm" is a relatively small frame structure lined with plastic and filled with about 14 inches of pea gravel. An adjoining chemical tank is set to automatically pump the life giving chemical-water combination into the bed thrice daily.

"The three main chemicals in the solution are nitrogen, phosphoric acid and potash," said Murphy. "There's also a trace of other elements such as cobalt, molybdenum, copper sulfate, zinc sulfate, boron, manganese sulfate, iron, magnesium, and calcium sulfate."

The mixture drains from the bed and returns to the tanks, where it may be reused in the early part of the season for from three to four weeks.

"During the middle and toward the end of the growing season, the chemicals must be changed about every two weeks," he said. He said tomato plants thrive best in 70 to 92 degrees F. temperatures.

Murphy says his tomatoes aren't any bigger or better-tasting than soil-grown tomatoes, but he sees several advantages to his system.

"I have no problem with cultivating, mulching and weeding," he said, "and my plants are automatically watered and fertilized."

Murphy is experimenting with pole beans, bush beans, radishes and green onions.



CITY "FARMER"—Art Murphy, Fort Worth structural engineer, displays tomatoes grown chemically right in his own back yard.

Con-Trib Grants Total $553,474

(Continued from Page 1)

Dental Health Association, $1,000.

Children's Hospital and Health Center, $7,500; Citizen's Scholarship Foundation, $1,500; City Rescue Mission, $1,500; Crippled Children's Society, $5,000; Crossroads Foundation, $1,000; Cystic Fibrosis Association, $3,000; Diabetes Association, $500; Elementary Institute of Science, $3,130; Epilepsy Society, $2,000; Episcopal Community Service, $1,200; Family Service Associations, $1,-200; Fellowship Center, $500; Flying Samaritans, $580; Girls Club of San Diego, $1,000.

Heart Association, $10,000; Home of Guiding Hands, $4,426; Homemakers Service, $1,000; International Guiding Eyes, $2,500; Junior Achievement of San Diego, $3,000; Lions' Sight Preservation Clinic, $925; March of Dimes, $1,500; Mayor's Council on Youth Opportunity, $11,440; Mental Health Association, $3,000; Mountain Rescue Team of San Diego, $1,500; Multiple Sclerosis Society, $1,500; Muscular Dystrophy Association, $2,600; National Information Bureau, $100; Neighborhood House, $1,800; Pathfinders, Inc., $750; Planned Parenthood Association, $1,250.

Retarded Children's Association, $1,400; Safety Council of San Diego, $3,000; St. Madeline Sophie's Pre-School, $5,000; St. Stephen's Group Home, $2,000; St. Vincent dePaul Society, $750; Salvation Army, $3,500; South Bay Pioneers, $800; Speech and Hearing Clinic of San Diego, $1,310; Symphony Orchestra of San Diego, $2,000; Tecolote Youth Council, $5,000; Tuberculosis and Health Association, $610; United Jewish Federation, $1,000; YMCA, $4,872; YMCA, $963.

In Los Angeles, the United Crusade and Children's Hospital received a total of $800. In addition, the Emergency Aid Fund disbursed $55,294.56.

NASA Contract Calls for Study

(Continued from Page 1)

necessitate well planned, integrated systems and handling procedures to meet two basic requirements: dependable function and maximum safety.

At present, the proposed 1973 Mars Viking mission is planned with about 3,000 pounds of earth storable propellants to brake the capsule and bus into planetary orbit.

Earth storable propellants are those which remain liquid at earth temperatures. The propellants planned for the 1973 mission are nitrogen tetroxide and monomethylhydrazine.

For later planetary orbiters and landers, planners are considering space storable propellants such as FLOX/methane and oxygen difluoride/diborane. Space storable propellants are those which will remain liquid at in-space temperatures, approximately -200°F, thus minimizing boil-off losses on the long flights.

The contract study will first identify and analyze the spacecraft pre-launch operations sequence for hardware and propellants at ETR. A complete listing will then be made of all new and/or unique requirements in ground equipment dictated by the use of oxygen difluoride/diborane.

Study leader for the program is Dan Heald, Dept. 952-5.

Defense Secy. Laird Scheduled to Speak

Secretary of Defense Melvin Laird will be guest speaker at the Aerospace Luncheon Friday (Oct. 31) in the Century Plaza Hotel, Los Angeles.

Representing Convair at the event will be H. C. Dow, general counsel; K. E. Newton, director of launch vehicles; C. W. Blakey, director of contracts; and D. K. Warner, manager of market analysis.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Nov. 4. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

★ ★ ★

ADVENTURERS—Meeting Nov. 19, 7:30 p.m.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BASKETBALL—Teams now forming, organizational meetings Oct. 30 and Nov. 13, 7 p.m.

BICYCLE CLUB—Shelter Island, 12½-mile ride, Nov. 2, 2 p.m., meet at Islandia Hotel. Rancho Santa Fe, 25-mile ride, Nov. 8, 9 a.m. meet at Security Bank.

BONAIR FLYERS—Meeting Nov. 6, 7:30 p.m.

BRIDGE—Duplicate bridge sessions each Friday, 7:30 p.m.

CERAMICS—Meet Tuesdays and Thursdays, 7-10 p.m. and 9 a.m.-noon.

CHORUS—Rehearsals Mondays, 7:30 p.m.

COINEERS—Meeting Nov. 10, 8 p.m. "Scout Night" Jan. 12. Calif. State Numismatic Assn. Convention, Nov. 6-9, Bahia Hotel.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m. CRA Missile Park picnic shelter.

DELTA DIVERS—Meeting Nov. 12, 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting Nov. 5, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF—Tijuana tournament, Nov. 22-23.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting Nov. 11, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45, House of Ice, Interstate 8 and Lake Murray Blvd., Flat rate fee $1 (includes skates). Tomorrow (Oct. 30) Halloween party, admission is free to those in costumes.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Nov. 9, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Nov. 6 7:30 p.m.

RIDING CLUB—Meeting Nov. 12, 7:30 p.m.

RIFLE CLUB—Senior shoot Nov. 12, 7 p.m. Junior shoot, Nov. 1, 9 a.m. Gillespie Field Range.

ROCKHOUNDS—Meeting Nov. 12, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Colorado River trip, Oct. 31-Nov. 2. Regular meeting Nov. 4, 7:30 p.m., South Bay Club, 3866 Ingraham St. Dry land Ski School at Balboa Park starts Nov. 2.

SPORTS CAR CLUB—Meeting Nov. 12, 7:30 p.m.

SQUARE DANCE—Dance Thursday, 8-10 p.m.

STAMP CLUB—Meeting Nov. 13, 7 p.m.

TABLE TENNIS—Turkey Tournament starts Nov. 7, 7 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 7:30 p.m. Dynamic Toastmasters No. 457, Thursday, 5:30 p.m.

TOURS—Las Vegas trip Nov. 21-23.

TRAILERS—Meeting Nov. 4, 7:30 p.m.

WIVES CLUB—Hollywood bus trip, Nov. 5, 9 a.m.

Goblins, Ghosts Skate Tomorrow

Goblins and ghosts will take to the ice at 6:15 p.m. tomorrow (Oct. 30) at the CRA Ice Skating Club's annual Halloween party at the House of Ice.

Admission will be free for those in costumes with a 50-cent charge for skate rental. A series of contests, with prizes for game winners and those with best costumes, will be held during the regular skating session.

The Ice Skating Club meets at 6:15 each Thursday at House of Ice, with $1 admission covering instruction classes and skate rental. Classes will be omitted during the first two weeks of November due to vacation of the instructor.

Thanksgiving turkeys will be awarded as door prizes at the club's Nov. 13 session.

Dittmann Leader In Pistol Shoot

CRA Pistol Club marksmen Bill Dittmann, 279-6x, and Ernie Kampmann, 272-8x, took honors in expert-class competition at the club's Oct. 12 matches.

Other results were: Masters—Roland Schneider, 295-9x; Warren Walker, 292-13x; Sharpshooter—James Thomas, 241-1x; 22 cal. Short National—Don O'Brien, 283; Jim Halfacre, 272; Walker, 269; Schneider, 267.

Next matches are at 9:15 a.m. Nov. 9 at the police pistol range.

QC GROUP TO HEAR TALK ABOUT TOYS

A discussion on the product safety and quality assurance of toys will be held at the Nov. 10 meeting of the San Diego section of the ASQC.

Discount Tickets

The following tickets are on sale at CRA, Convair employe benefits and Electronics-SD outlets:

Hockey: San Diego Gulls vs. Vancouver at 8 p.m. Saturday Nov. 8. $3 seats are available for $2.25.

Basketball: San Diego Rockets vs. Boston Celtics at 8 p.m. Saturday Nov. 22. $4 tickets are available for $3.

Football: San Diego Chargers vs. Denver at 1 p.m. Sunday, November 23. Tickets are $6.

Coineers to Hear Talk on 'Money'

Mrs. Gay Lewis will discuss "Money" at the CRA Coineers' meeting at 8 p.m. Nov. 10 in the CRA Clubhouse. Giveaway coins, door prizes, a drawing of assorted proof sets, and refreshments are scheduled. "Cents" will be featured in the monthly auction.

A "scout night," with scouts attending as guests and discussions on requirements for a "coin collecting merit badge," is scheduled Jan. 12. Coins are being collected to be given to Scouts attending and special exhibits are planned.

The meeting will be open to all employes and family members and the club needs to determine number of people interested in attending. Phone Steve Ames, ext. 659 LF, Harry Jennings, ext. 1176 LF, or Chuck Willey, ext. 2729 KM, for information.

Ski Club to Weekend On Colorado River

The Convair Ski Club will take a water skiing Colorado River trip Oct. 31-Nov. 2.

The club will meet at 7:30 p.m. Tuesday, Nov. 4, at the South Bay-Mission Bay Club, 3866 Ingraham St., to discuss the upcoming ski season.

Club plans are: dry land ski school at Balboa Park Nov. 2, 9, 16 and Dec. 13; a ski trade night at 7:30 p.m. Fri., Nov. 21 at CRA Clubhouse; Thanksgiving trip to Mammoth Nov. 26-30; Mammoth bus trip steak fry, Dec. 5-7; New Year's round robin trip to Lake Tahoe; Sun Valley trip, Feb. 27-Mar. 8; two snowski trips per month; and inter-club racing league.

For information call Harry Eastman, ext. 2823 KM or Bob Vogel, ext. 1395 KM.

Racing Films Planned By Sports Car Club

Films on the 1968 Monte Carlo Rally and the 1968 Japan Grand Prix will be shown at a CRA Sports Car Club meeting at 7:30 p.m. Nov. 12 in Room C of the CRA Clubhouse.

Club representatives said both films were produced by Nissan Motor Corp. and "feature unusually excellent action photography."

All General Dynamics employes and family members are invited.

State Coin Group To Hear Vince Bacon

Vince Bacon, Dept. 553-2, will speak at the California State Numismatic Association Convention to be held Nov. 6-9 in the Bahia Hotel.

Bacon, a commissioner of the CRA Coineers Club, will talk on "The Many Faces of Liberty," at 8 p.m. Nov. 7. Coineers will assist at the convention and volunteers are needed. For information call Barbara Buck, 488-5900.



LINKS LAURELS—Trophy winners in Electronics-SD Twilight Golf League, from left, are (top row) Joe Ravenis, Sherrill Daily, Ernie Huber; (center) George Varney, Russ Luker, Ron Dickerson, Paul Distabile; (front row) Don Costelow, C. B. Bagaloff, and John DeTate. Others, not present for photo, were Gar Herring, Bill Martin, Art Martens, Lan Shockley, Matt Klauk, and Gerry Lynn.

CRA Sponsors Trip To Vegas Nov. 21-23

CRA is sponsoring a Las Vegas trip Nov. 21-23.

The cost is $75 per person and includes double occupancy rooms for two nights at the Flamingo Hotel, round trip on Western Airlines, dinner and show at the Flamingo, two cocktails and show at the International Casino, daily buffet from 4 to 6 p.m., complimentary Keno games tickets, swimming pool and golf privileges, and taxes and tips.

There are a limited number of seats and money on reservations must be in by Nov. 1. For information call ext. 1931 or 1111 KM.

Hoop Team Managers Will Plan Season

There will be a meeting of managers of teams that intend to participate in CRA Fast-Break and Slo-Break Basketball Leagues at 7 p.m. Thursday, Oct. 30 at CRA Clubhouse.

The meeting is to plan the season beginning the first week of December. There will be a second meeting Thursday, Nov. 13 when team rosters are due.

Teams will play at Muni Gym, Balboa Park. Practice courts can be reserved by calling Jack Hand, 239-4421. For information call Pete Beyrer, ext. 1111 KM.

Cycle Club Plans Island, Rancho Rides

CRA Bicycle Club will take a 12½-mile ride to Shelter Island on Nov. 2 and a 25-mile ride through Rancho Santa Fe on Nov. 8.

The Nov. 2 ride will begin at 2 p.m. from Islandia Hotel with Bob Williams as ride leader. The Nov. 8 ride will begin at 9 a.m. from the Security Bank in Rancho Santa Fe with Bill Palmer as ride leader. Call Dave Lukens, ext. 2881 KM, for additional information.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

BRONZE TROPHIES AWARDED GOLFERS

Bronze serving-tray trophies have been awarded to 16 members of first and second-place teams in Electronics-SD's Twilight Golf League.

The trophies were presented at a recent dinner hosted by Electronics-SD Recreation Association and attended by 32 Twilight League linksmen in the Campus Chuck Wagon.

First-place trophy winners were George Varney, Russ Luker, Ron Dickerson, Don Costelow, C. B. Bagaloff, Lan Shockley, Matt Klauk, and Gerry Lynn. Receiving runners-up trophies were Joe Ravenis, Sherrill Daily, Ernie Huber, Paul Distabile, John DeTate, Gar Herring, Bill Martin, and Art Martens.

Don Costelow received a special trophy for outstanding service in managing the league. Other team members were awarded golf balls.

Openings Reported In Singing Group

Employes and relatives wishing to join the General Dynamics Chorus may do so by attending rehearsals and meetings from 7:30 to 9 p.m. Monday at CRA Clubhouse.

The chorus is directed by Don Jackson and no tryouts are required. For information call Jim Pate, ext. 3034 KM or Jo Ann Bray, ext. 1091 LF.

Turkeys to Reward Table Tennis Play

CRA will sponsor a Table Tennis Turkey Tournament at 7 p.m. Friday, Nov. 7, in the CRA Clubhouse.

Registration is between 6:30 and 7 p.m. Winners of winner's and loser's brackets will receive large turkeys.

Tyler Winn Directs Play at Old Globe

Tyler Winn, Dept. 954-3 leadwoman, will direct "The Royal Gambit" at the Old Globe Cassius Carter Stage. She is the second woman to direct a play at the Old Globe.

The play concerns Henry VIII and his wives and opens Dec. 4.

Youth's 1/30 Scale 'Little Joe' Wins National Rocketry Title

A fifteen-year-old Thousand Oaks, Calif. youth recently combined ingenuity, craftsmanship and a Convair rocket design to outdistance competition at the National Association of (model) Rocketry's annual meet.

Scott Layne, a high school sophomore, used a flying 1/30-scale model Little Joe II launch vehicle to win the title of National Junior Champion for 1969. He amassed 735 of 1,000 points at the meet held at the Air Force Academy in Colorado Springs, Colo. Junior competition includes youths to age 17.

Layne employed paper, balsa and plastic to construct his rocket which, by regulation, had to be authentic in every detail. He designed the rocket to scale himself, using blueprints and details provided by Convair's Jack Hurt, former program manager for Little Joe II production which ended in 1966. Hurt is currently program manager for DC-10 fuselage production.

Layne's finished product, which flew to 600-foot altitude, was judged on color, fins, weight (under 500 grams required), workmanship, neatness, relative difficulty of design, construction, duplication and in-flight behavior.



ICE CRACKER—Quincy-built supertanker SS Manhattan cracks ice six feet thick in Melville Sound. Icebreakers in background accompanied her to give aid when needed.

Quincy-Built Tanker's Voyage Called 'Gamble'

Shortly after 11 a.m. Sunday, Aug. 24, the Quincy-built SS Manhattan left her berth at Sun Shipyard in Chester, Penn., for the start of a 4,500-mile voyage across the top of North America —a trip that one retired sea captain called "almost an exercise in self destruction."

He was referring to the ship's planned trip through the Northwest Passage, an area of ice-packed straits and channels never before sailed by a commercial vessel. Even Humble Board Chairman M. A. Wright used the word "hopeful" and referred to the venture as a $39 million gamble. An enormous amount of preparation had gone into the project and the time had come to get a ship up there to see if it would work.

The purpose of the expedition was to test the feasibility of using the Northwest Passage as an economical new tanker route between the oil rich Prudhoc Bay area on Alaska's North Slope and the oil hungry market of the Eastern United States.

Almost from the time the big ship entered the Northwest Passage on Sept. 5, she waged a constant battle with ice. She smashed, broke, and ground her way through 650 miles of frozen sea, some of it containing ice from six to 14 feet thick with ridges totaling 40 feet in height.

Several times, she became stuck in the McClure Strait which was under pressure from the polar pack as a result of strong Nor'-westerly winds that had been blowing for 10 days. At Cape Clarendon off Melville Island, for example, she slammed into ice 24 feet thick and was halted. She backed up a short distance and charged again. However, ice floes filled in behind the ship seconds after she passed and even after the ship broke the floes, there was no place for the ice to go. It just jammed against the ship's sides, locking her in place. The Canadian icebreaker, John A. McDonald, accompanying the Manhattan, came to her aid by charging the ice on both sides of the stuck vessel. This allowed the Manhattan to get a running start and shatter the ridge.

About 100 miles into the McClure Strait, the ice condition became so rugged that the decision was made to turn back and complete the Northwest Passage through the Prince of Wales Strait. The Manhattan finally churned through the last of the Arctic ice to become the first commercial ship to negotiate the Northwest Passage.

It will be early in 1970 before a decision can be made on the route's commercial feasibilities. By then, mountains of data from the expedition will have been analyzed, and Humble can determine the economics of building the tankers it will need to transport the oil.

If a tanker route through the Northwest Passage is feasible for commerce, the project could open the door for more than shipments of oil. The mining of both base and precious metals in the Arctic is still in its infancy, primarily due to the transportation problem. The Northwest Passage could afford a way to bring these riches to market. Also, the new route would shorten the distance to many world markets. All of this might lead to the biggest shipbuilding boom since World War II.

The Manhattan and her 54-man crew and some 70 scientists, American and Canadian government representatives, oil company officials, and newsmen sailed for Point Barrow, western terminal point of the voyage. After arriving at Point Barrow on Sept. 20, the Manhattan and her victorious crew returned eastward for further ice tests in the Melville Sound and McClure Strait before heading back to New York.

'Unskilled' Training Subject of Article

Merle Gainer of FW educational services section is author of an article appearing in the August issue of Training and Development Journal.

The article, "Office Procedures Training for the Disadvantaged Unskilled," tells of approaches used to train unskilled and "disadvantaged" for office jobs at Fort Worth division.

General Dynamics Among Companies Earning NASA Praise For Apollo 11

General Dynamics has been awarded a NASA Certificate of Appreciation for outstanding contributions to the Apollo Program and to success of the historic flight of Apollo 11.

Jack B. Hurt, program manager for Convair division's Little Joe II launch vehicle, which lifted the Apollo spacecraft in unmanned test flights, accepted the award in ceremonies Oct. 16 at NASA's Manned Spacecraft Center in Houston.

The award cited General Dynamics "for outstanding contributions to the Apollo Program which were vital to the successful achievement of the national goal of landing men on the moon and returning them safely to earth in this decade, accomplished by the Apollo 11 mission—July, 1969."

Many General Dynamics divisions and subsidiaries made contributions to the Apollo Program.

Quincy, Electric Boat, Electronics-Rochester, Electronics-SD, Convair, and Stromberg-Carlson assisted in fabrication and outfitting of the three Apollo Instrumentation Ships.

Electronics-SD built a mechanism for docking the Lunar Module and Apollo spacecraft under subcontract from North American. Fort Worth division produced radiation monitors used by the astronauts in Apollo and Gemini flights.

Convair's Atlas and Centaur vehicles launched Lunar Orbiter and Surveyor spacecraft to pave the way for lunar landing and Convair tested vent valves for the Saturn IV-B under Douglas subcontract and designed and installed the Operational TV System at Complex 39 that was used in Apollo launch control and by commercial TV networks.

Dr. George M. Low, manager of the Apollo Spacecraft Program Office, was key speaker for the awards ceremony.

Robert R. Gilruth, director of the Manned Spacecraft Center, presented the awards to government and industry organizations and individuals being honored.

Apollo 11 Astronauts Edwin E. Aldrin Jr., Neil Armstrong, and Michael Collins, in a message in a printed program for those attending the ceremony, said:

"We of the Apollo 11 crew have enjoyed a magnificent adventure. The credit for its success goes to some 400,000 people who, at one time or another during the past few years, have worked toward the lunar landing goal.

"As you know, all systems performed beautifully, not only taking us to the lunar surface, but bringing us safely home again! That was possible only because each of you did your part. . .

"So we want to take this opportunity to say to all of you on this great Apollo team, and particularly our fellow workers at MSC, the two simple words that can never be overused: 'Thank You!'"

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

DONALD E. ANDERSON (1956) from Convair division to Fort Worth division; **DONALD P. DUBOIS** (1963) from Electric Boat to Canadair Limited as source inspection supervisor; **NORMAN R. HARPER** (1961) from Corporate Headquarters to industrial relations representative, Electric Boat; **GEORGE STEELE JR.** (1967) from Electric Boat to Quincy as associate counsel; **HAROLD K. CHENEY** (1936) from Fort Worth to project engineer, Pomona; **WILLIAM B. HOWARD** (1967) from Electric Boat to Fort Worth as industrial relations analyst; **BILLY L. COLEMAN** (1960) from Convair to quality control engineer, Electronics-SD; **ROBERT D. PEACOCK** (1968) from Electronics, Rochester to Stromberg-Carlson; **ANGELO A. PASTORE** (1960) from Electric Boat to planner, Quincy; **JULIUS JANCSI** (1955) from Convair to engineer, Electronics-SD; **JOSEPH G. O'BRIEN** (1962) from Electric Boat to Electronics, Rochester as marketing administrator; **JOHN A. OLIVAR** (1966) from Convair to engineer, Electronics-SD; **GEORGE J. MERCER** (1969) from Electric Boat to production planner, Quincy; **AUSTIN B. MANDEVILLE** (1940) from Convair to Fort Worth (EAFB); **WILLIAM A. SCHMITZ JR.** (1951) from Convair to Fort Worth (EAFB); **RALPH W. SHAFFER JR.** (1941) from Convair to Canadair; **ROGER A. LA FLAMME** (1959) from Electric Boat to Electronics, Rochester as senior product assurance aide; **RICHARD D. DICKENS** (1953) from Convair to Fort Worth; **H. M. FENDRICH JR.** (1964) from Electronics-SD to Quincy; **GEORGE R. SPITZER** (1963) from Convair to Fort Worth.

GD and Pilots Awarded Flight Safety Honors

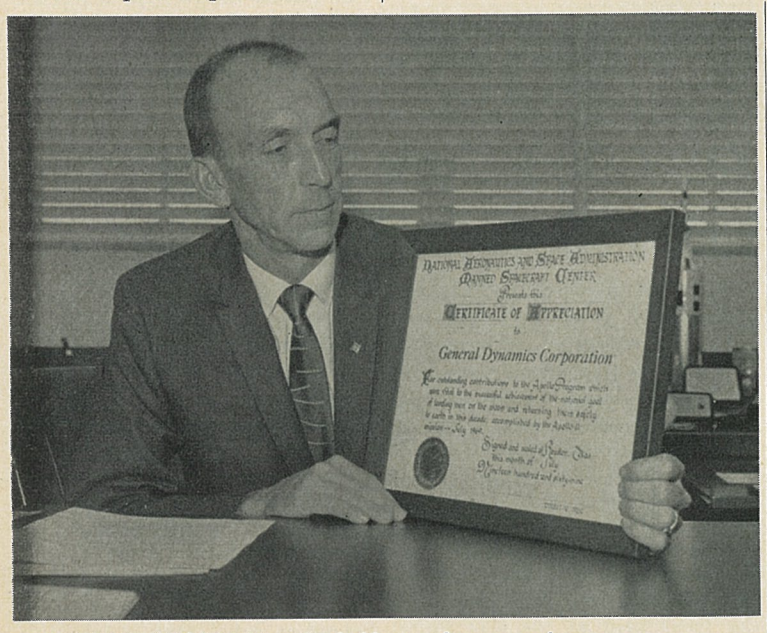
General Dynamics and three Fort Worth division pilots have been named for honors by the National Business Aircraft Association.

General Dynamics was awarded the NBAA annual Corporate Flying Safety Award, given to companies whose aircraft have flown more than a million accident-free miles.

John A. Rogerson qualified for the NBAA Million Miler Award, given to pilots who fly more than a million accident-free miles in corporate aircraft.

Two other Fort Worth pilots—Robert E. Myrann and Orrie G. Hiett Jr. — were named winners of the NBAA Pilot Safety Award, for pilots who've flown corporate aircraft more than half a million accident-free miles.

In winning the corporate award, Fort Worth division logged almost 2.5 million miles. Pilot Safety Awards went to Hiett for 964,320 miles and Myrann for 380,130 miles.



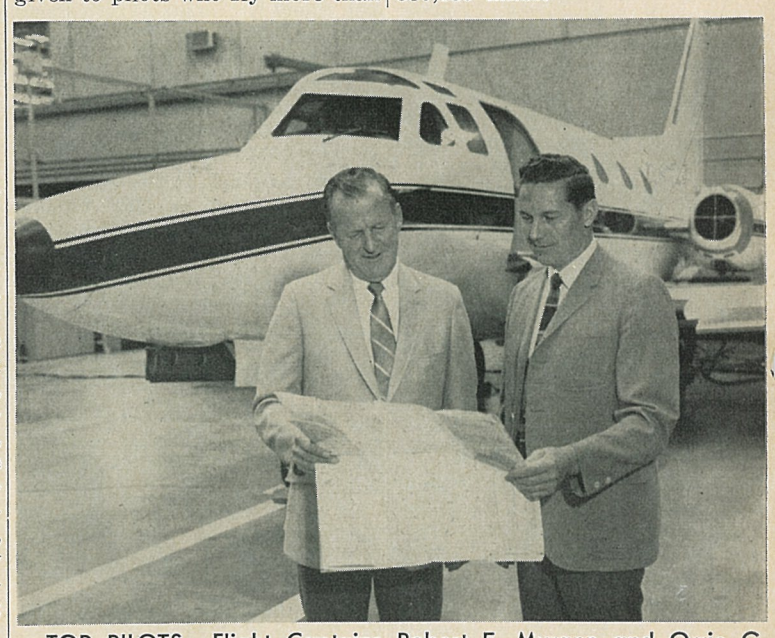
APOLLO ACCOLADE—Jack Hurt, who served as program manager for Convair's Little Joe II, shows NASA Certificate of Appreciation awarded to General Dynamics for its contributions to Apollo Program.

Motivation Council Meets in New York

A meeting of the General Dynamics Motivation Working Group was held Oct. 15 at Corporate Headquarters.

Participating were Wes Magnuson, Convair, chairman; R. H. Nicholson, Electronics-SD, chairman of the quality panel; Ernie Cauthen, Fort Worth; Frank Clarke, Canadair; Dick Gregory, Electric Boat; Gary Grimes, Corporate Headquarters; Jim Haney, Pomona; Phil I. Harr, Corporate Headquarters; John Kuda, Electric Boat; Bob Peiffer, Stromberg-Carlson; Arch Rambeau, Corporate Headquarters; Harry Reiter, Quincy; Mac Rosso, Dynatronics; Colin Ware, Electronics; George Kaup, Electro Dynamic.

Harr, Corporate director of reliability, quality control and value control, and Rambeau, Corporate director of management relations and development, spoke.

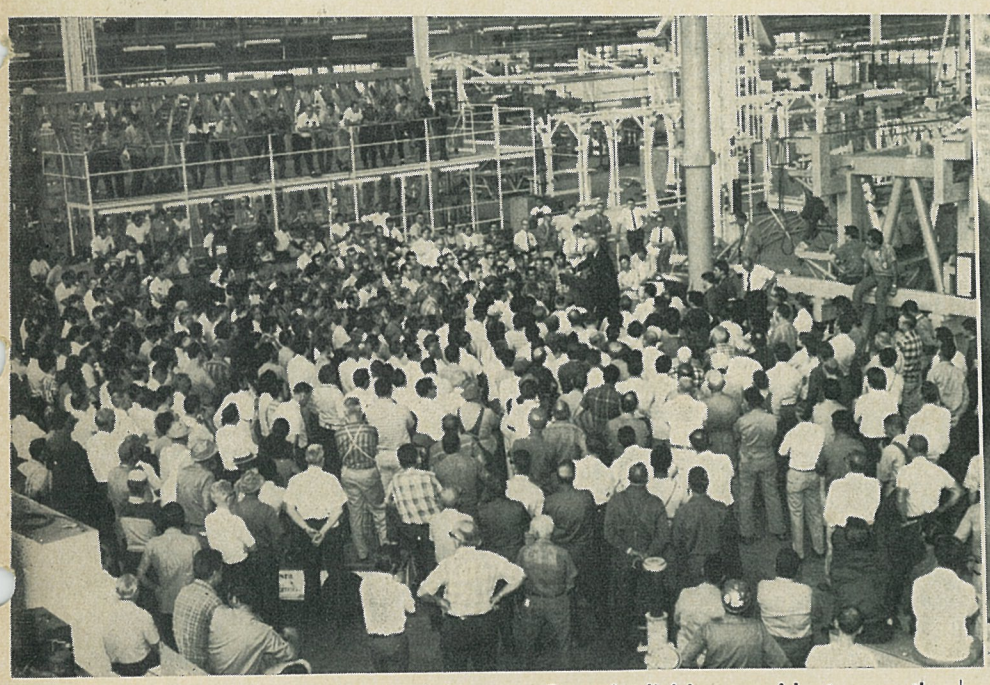


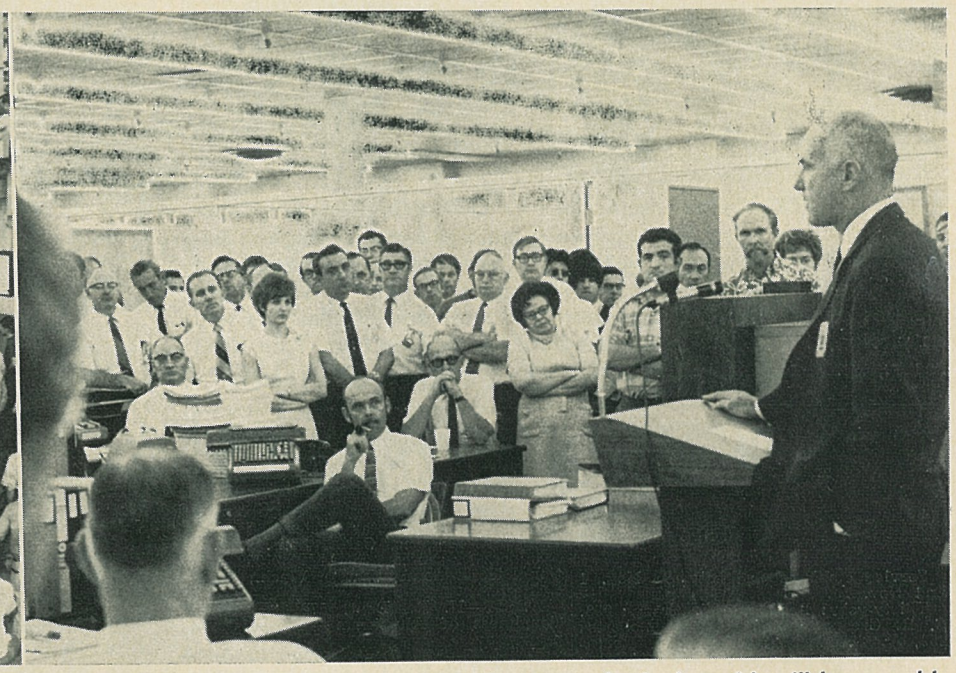
TOP PILOTS—Flight Captains Robert E. Myrann and Orrie G. Hiett Jr., pilots of Fort Worth division Corporate aircraft, were named winners of NBAA Pilot Safety Award for flying more than half a million accident-free miles. Pilot John A. Rogerson also was honored.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 22 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 12, 1969





PRESIDENT PRESENTATIONS—Jack Bowers, Convair division president, recently gave 37 briefings to employes at San Diego facilities to acquaint them with status of current and future programs and progress toward division objectives. In photo at right he is shown addressing launch vehicle programs personnel, and at left is scene during gathering of DC-10 assembly people at which he called for increasing schedule effort. Among areas to receive future emphasis, he said, will be reusable space boosters, vertical and short-takeoff and landing aircraft, and Air Force A-X close-support aircraft. He said current programs will provide stable employment base for several years, with work on DC-10 representing $1 billion potential during next 10 years.

Dynamics Reports $10,314,000 Net

Net income of General Dynamics Corporation and subsidiaries for the three months ended Sept. 30, 1969 was $10,314,000, equivalent to 98 cents per common share, Roger Lewis, president announced late last month.

During the corresponding period of 1968 a net loss of $15,805,000 was sustained, reflecting the after-tax writeoff of $30,074,000 in excess of costs of surface ship and submarine construction contracts.

Sales for the third quarter of 1969 were $648,683,000, compared to $580,351,000 for the corresponding 1968 period.

For the nine months ended Sept. 30, 1969, the company sustained a net loss of $9,058,000, equivalent to 86 cents per share of common stock. This reflects the net loss of $19,372,000, equivalent to $1.84 per share of common stock, previously reported for the six-month period ended June 30, 1969. As previously announced, the net loss in the first six months of 1969 was caused by the writeoff of excess costs of $59,044,000, after taxes, on long term surface ship and submarine construction contracts. Of this amount, $53,144,000 was charged against 1969 earnings and the remainder to a previously established reserve.

Net income for the first nine months of 1968 was $18,051,000, equivalent to $1.72 per common share. This included a writeoff of excess costs on surface ship and submarine contracts of $39,619,000 after taxes and a nonrecurring gain of $8,927,000, or 85 cents per share, on the sale of General Atomic division.

Sales for the first nine months of 1969 were $1,784,725,000 compared to $1,919,407,000 for the first nine months of 1968.

The directors of General Dynamics today declared a regular quarterly dividend of 25 cents per common share, payable Dec. 10, 1969, to share owners of record Nov. 10, 1969.

'Heart Attack' Topic for Club

"Heart Attack — What is Your Risk?" will be the subject of Dr. William P. Castelli at the November meeting of the Convair Management Club at 5:30 p.m. Thursday, Nov. 20, Fleet Room, Hilton Inn.

Dr. Castelli is a lecturer in preventive medicine, Harvard Medical School.

Table reservations will be used for the first time at the meeting and requests should be sent to industrial relations, 130-02.

Theme of the meeting will be the Golden 200th. Table cards and tickets will be in gold.

The meeting is sponsored by industrial relations. For information call Jim Boggus, ext. 2244 KM.

Next Salvage Sale Scheduled Dec. 13

Employe sales day at the Convair salvage yard, originally planned for Dec. 6, has been rescheduled to Dec. 13.

Admission to the Lindbergh Field yard, open from 8 a.m. until noon, is by badge. Children and pets are not allowed.

Lewis Gives Bowers New Responsibility

Jack L. Bowers, executive head of Convair division since October, 1965, with the title of general manager, has been appointed president of the division by Roger Lewis, president of General Dynamics.

At the same time, Lewis announced that in future A. G. Daubert, Electronics division general manager since April of this year, will report to Bowers. The Electronics division includes facilities at San Diego, Calif., Rochester, N.Y., Orlando, Fla. and Avenel, N.J.

This consolidation of management brings together, under Bowers, two divisions involved in the military electronics and aerospace field.

Improved Centaur Vehicles Ordered

Convair has been awarded a $25,581,000 cost-plus-incentive-fee contract to design and build the first of a new series of Improved Centaur D-1 upper stage rocket vehicles.

The contract will be managed by NASA's Lewis Research Center which has responsibility for Centaur development and launches.

The improved version of the Centaur primarily involves developments that have occurred since Centaur was first designed, such as in the electronics field.

In addition to updating the system and simplifying it, the vehicle will be designed to be compatible with the Titan III booster.

Included in the contract is the delivery of an Improved Centaur to be proof flight tested in the fall of 1972.

Centaur was the first liquid hydrogen-liquid oxygen propelled rocket and pioneered the way for the high energy propellant combination to be used elsewhere, such as the upper stages of the Saturn rocket.

The Atlas-Centaur combination has successfully launched seven Surveyor spacecraft to the moon, two Mariner spacecraft to Mars, an Orbiting Astronomical Observatory into earth orbit and Applications Technology Satellites.

The Convair organization to develop Improved Centaur is headed by Ken Newton, director, Launch Vehicle Programs, and C. E. Wilson, deputy program manager for D-1.

Other members of the team and their areas of responsibility are:

J. E. Fithian and D. W. Geyer, Dept. 989-0, electrical systems; K. C. Kejman, Dept. 989-1, RF systems; R. A. Wilson, Dept. 989-2, guidance and flight control; D. M. Peterson, Dept. 989-3, digital C/O; J. W. Schaelchin, Dept. 989-4, electrical and packaging.

J. W. Vega, Dept. 987-0, systems, integration; W. G. Phillipp, Dept. 987-0, Titan integration; J. S. Harrison, Dept. 987-0, GSE integration; L. F. Buss, Dept. 987-0, software integration; W. S. Hicks, Dept. 987-0, test integration.

S. Zeenkov, Dept. 987-0, contract performance; R. H. Thomas, Dept. 988-0, mechanical systems; F. C. Taylor, Dept. 988-0, fluid systems; G. W. Norris, Dept. 988-1, tank and bolt-on; R. A. Jones, Dept. 988-2, shroud and interstage adapter.

Research and Engineering Adds $1,715,800 in Savings

Thirty three Convair research and engineering department men were awarded commendation certificates Oct. 23 for third-quarter value control projects (VCPs) and value engineering change proposals (VECPs) that will save $1,715,800—bringing the department's total for the year to $7,123,800.

Structural design (Dept. 511) was awarded the departmental quarterly value control trophy for third quarter savings of $1,420,100, boosting its total for the nine-month period to $3,097,866. (Structural design previously had shared the trophy with structural analysis Dept. 587 for first-quarter performance.)

F. D. Applegate, director of

(Continued on Page 2)



VALUE HONOR — F. D. Applegate, left, director of product design, presents Convair research and engineering department's quarterly value control trophy to S. W. Swenson, center, assistant chief design engineer-structure, and W. E. Service, group engineer, for structural design Dept. 511. Service also received commendation certificate for VCP that will save $200,500.

Convair Plans Display of Products For Employes, Families and Public

Convair will display its major products at the Lindbergh Field plant, Saturday, Dec. 6, for employes, their families and the general public as part of San Diego's 200th Anniversary.

The display will be open from 9 a.m. to 5 p.m. At 1 p.m. there will be a ceremony in the product display area during which Convair will receive the Air Force Sustained Craftsmanship Performance Award.

In addition to the Convair display, NASA's Project Apollo exhibit trailer will be present and Convair-built planes on view.

A map of the parking areas and a schedule of events will appear in the next edition of GD/NEWS.

NEWS Publishing Schedule Slipped

General Dynamics NEWS will slip its publishing schedule one week, because of the Thanksgiving holidays. The next issue, therefore, will be on the news stands Dec. 3.



OFF THE PRESS—Sandy Anderson, a clerk in Convair's Dept. 130-9, preview new CRA brochure to be distributed through supervision to all employes this week. Brochures contain information and related artist's sketches for 45 CRA clubs and on CRA facilities. Pictures of the CRA commissioners and staff are included, as well as photos of CRA Clubhouse, Health Club, Missile Park, Pine Crest resort, and Gillespie Field gun range.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Nov. 1 and Nov. 15.

Thirty-year: Dept. 027, J. Arena; 059, C. R. Greenwood; 143, F. R. Roberts; 250, O. A. Mereon; 401, D. M. Robinson, W. P. Upahm; 420, S. J. Williams; 513, P. L. Brady.

Twenty-five-year: Dept. 002, I. T. Andrews; 027, F. J. Gianola; 049, P. J. Aslin; 101, Pluma R. Huddleston; 113, Florence H. Barnes; 149, H. Stanford; 515, K. P. Busch.

Twenty-year: Dept. 015, A. A. Lockwood; 031, R. E. Crice, F. C. Martin; 149, E. C. Schmidt; 402, Ora F. Carpenter; 802, E. E. Hixson.

Fifteen-year: Dept. 002, S. W. Fung; 059, R. L. Brooks; 101, Marguerite A. Sismour; 110, Marie R. Brock; 193, Catherine M. Malcangio; 195, M. Sturman; 250, M. M. McKinstry; 400, J. N. Lee; 401, L. Lacava; 515, J. C. O'Neill; 533, R. M. McGregor; 543, F. G. Brickson; 585, G. L. Getline; 958, R. E. Johnson.

Ten-year: Dept. 001, R. C. Leyvas; 046, Mary L. Samarron, Nettie M. Szafraniec; 059, J. Grimsley; 101, U. T. Medin, R. A. Palenske; 130, Frances A. Kaminski; 131, K. R. Van Gorder; 103, C. F. Wommer; 250, T. J. Dighiera; 401, R. Rigby; 515, Ann Hood; 518, Ona M. Goins; 567, J. E. Endicott; 592, E. J. Russ; 780, A. Kirinich, Pauline M. Williamson; 952, Mary H. Speth; 979, Artha A. Peyton; 999, C. S. Thomas.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Oct. 24.

Dept. 733, G. E. Asperin, $15; 810, T. E. Barker, $302.30; 130, O. O. Bowles, $265.60; 020, R. W. Clanton, $15; 010, T. L. Coone, $21; 020, C. Costantino, $15; 015, H. A. Crane, $15; 400, R. T. Davis Jr., $110.80; 027, J. G. DeLara Jr., $15; 046, D. G. Jackson, $16.30; 979, B. E. Monfort, $50; 027, D. R. Moon, $88.40; 149, J. F. Taylor, $15; 574, C. W. Weber Jr., $15; 979, K. C. White, $15; 027, J. A. Wilcox, $60.30; 027, J. C. Wilson, $149; 027, D. E. Wolfe, $15; 544, R. C. Zuranski, $15.

Employe Suggestion awards approved for the week ending Oct. 31.

Dept. 015, J. J. Blekkink, $15; 020, J. F. Bogen, $15; 840, J. C. Campbell, $1,142.30; 149, L. M. Earl, $110; 985, J. C. Erickson, $15; 002, E. D. Fountain, C. F. Giamanco, $7.50 each (joint award); 840, M. Gonzales, $15; 401, W. J. Gibson, $15; 566, S. Habery, $15; 027, E. Haith, $15; 027, L. Hale, $15; 565, H. M. Harvey, $15; 400, A. F. Koritnik, $180.30; 420, A. Markewich, $25; 149, C. A. McKinney, $15.80; 002, N. Moffett, $28.70; 045, J. F. Montejano, $19.70; 015, T. J. Milsson, $15; 059, J. M. Rivera, $104.40; 027, F. J. Serio, $103.20; 574, C. W. Weber Jr., $15; 401, J. E. Williams, $25; 045, R. F. Yturralde, $104.20.

Papers Presented

CONVAIR

BENSON—R. A., Dept. 591. "NEXUS, A Linguistic Technique for Precoordination." International Congress on Computational Linguistics, Stockholm, Sweden, Sept. 1-4.

BUJKOVSKY—G. J., Dept. 563. "An Engineering Data System Converted to Microfilm." International Micrographic Congress, Frankfurt, Germany, Sept. 24-26.

DRAGILA—C. C., Dept. 591. "Managing Data in Industry." Nat'l. Security Industrial Assoc./Technical Information Advisory Comm., Boston, Mass., Sept. 16-17.

GRIGGS—M., Dept. 596. "The Feasibility of Air Pollution Detection from Satellites." American Physical Society, Honolulu, Hawaii, Sept. 1-7.

MATTHEWS—S. W., Dept. 984. "Improved Centaur Computer Operating System." AIAA Computer Systems Conference, Los Angeles, Calif., Sept. 7-10.

Papers presented at SAMPE/1969 National Tech. Conf., Seattle, Wash., Sept. 9-11.

ADSIT—N. R., Dept. 572. "Fracture Toughness of Aluminum — Boron Composites."

VARLAS—M., Dept. 572. "Development of High Modulus Graphite/Asbestos Reinforced Laminates."

Papers presented at the Interagency Chemical Rocket Propulsion Group, Miami, Florida, Sept. 15-19.

BLATT—M. H., Dept. 584. "Surface Tension Devices for Cryogenic Expulsion in Low Gravity."

LEONHARD—K. E., Dept. 584. "Development of a Flight Weight Cryogenic Storage System."

Papers presented at the Air Force V/STOL Technology, Las Vegas, Nevada, Sept. 23-25.

GALLAHER—W. H., Dept. 583. "Circulation Controlled Rotor Investigation."

VELTON—E. J., Dept. 581. "Design Problems of a Commercial Jet Lift VTOL Transport — An Operational Evaluation of Tilt Wing V/STOL Transports."

WILD—J. M., Dept. 570, L. C. JOSEPHS, Dept. 580. "Application of Technology in V/STOL System Development."

Invention Disclosures

CONVAIR

BLANCHARD—D. L., Dept. 979. Two Edged Blade.

CALLIHAN—H. W., Dept. 532. Thrust Deflection Device for Jet Engines.

HYDE—T. C., W. M. WILLIAMS, Dept. 551. Automatic Headlight Shutoff Circuit/Device.

SUGGS—D. B., Dept. 513. Channel Washer—Longeron to Frame Attachment —DC-10 Fuselage.

VARLAS—M., Dept. 572. Environmental Production System for Ground and Airborne Reinforced Plastic Systems.

Personals

CONVAIR

Your comforting expression of sympathy is deeply appreciated by the family of Aileen Birch.

* * *

Expressions of sympathy from our friends at Convair following the recent death of our husband and father, Leonard Zang of Dept. 400-2, were deeply appreciated.

Mrs. Matilde Zang, Leonard and Anna

* * *

The family of W. T. Hollar, Dept. 141-0, wishes to express thanks to our Convair friends for the many cards and flowers sent at the passing of our father, Mr. C. W. Hollar.

* * *

Your comforting expression of sympathy is deeply appreciated by the family of Helen Allen.

* * *

We wish to express our gratitude and thanks to the many who extended expressions of kindness during the loss of our beloved daughter, Ann Marie.

The Bakich family

* * *

Please accept our deepest thanks for all courtesies extended to Al Escherich, of Dept. 780, during his current illness. Your thoughtfulness is greatly appreciated.

Al, Vonna & Nancy Escherich

* * *

Your kind expression of sympathy is greatly appreciated and gratefully acknowledged.

The family of W. T. Toon

* * *

We wish to thank everyone in Dept. 31, test lab and all our Convair friends for your help and kindness.

Mr. Jack W. Board and boys

* * *

We wish to thank our Convair friends for their kind thoughts and expressions of sympathy concerning the recent loss of our father, James P. Swarts.

Bern and Jerry Swarts

Deaths

CONVAIR

BLESSING—John A., retired Jan. 4, 1961, died, Oct. 27. Survived by his wife, Adaline.

MICKLE—Charles C., retired Jan. 31, 1962, Dept. 34-2, died Oct. 6. Survived by his wife, Mabel.

RICHARDT—Robert F., died Oct. 28. Survived by his wife, Orva.

NEWMAN—Alger B. Sr., retired Feb. 9, 1959, Dept. 31. Survived by wife, Josephine.

VAN DAELE—James J., Dept. 250, died Oct. 16. Survivors include wife, Emily, and two sisters.

WELCOME—Robert N., retired May 28, 1963, Dept. 206. Survived by his wife, Louetta.

WHITE—Floyd A., Dept. 574-1, retired June 13, 1969. Survived by his wife, Leone.

WILSON—F. Hack, retired July 9, 1966, died Oct. 28. Survived by his daughters, Helen Owen, Fran Andrews.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Mgt. Club Hosts Christmas Party At Disneyland

A five-hour Christmas party at Disneyland, featuring a San Diego 200th Anniversary theme, is scheduled for Dec. 13, sponsored by the Convair Management Club.

The evening entertainment begins at 8 o'clock.

Mickey Mouse will blow out candles on a giant birthday cake as one of the final 200th anniversary events as Disneyland, glistening in holiday decor, provides a "fantasyland" setting for the family outing.

Tickets are $3.95 (except for children under three who will be admitted free) and will cover unlimited use of rides and attractions and free parking.

Employes may purchase tickets at employe benefits offices at each of the Convair plants and at the Electronics-SD industrial relations office. Tickets also will be available at the CRA Clubhouse, the vendors' reception center in Bldg. 5 at LF, and at Vandenberg AFB and the Los Angeles material office.

Bus service from San Diego will be provided for those not wishing to drive. Round-trip bus tickets will be $3.50 and buses will load at 5 p.m. at the main entrance to the Kearny Mesa plant.

Don Evanson, chairman of the planning committee, said all tickets must be purchased in advance.

Convair's Al Gross Heads SOLE Chapter For Coming Year

Al Gross, Convair integrated logistics support engineering manager (Dept. 514-0), was elected chairman of the San Diego chapter of the Society of Logistics Engineers (SOLE) at its organizational "kick off" meeting Oct. 22 in the Admiral Kidd Club.

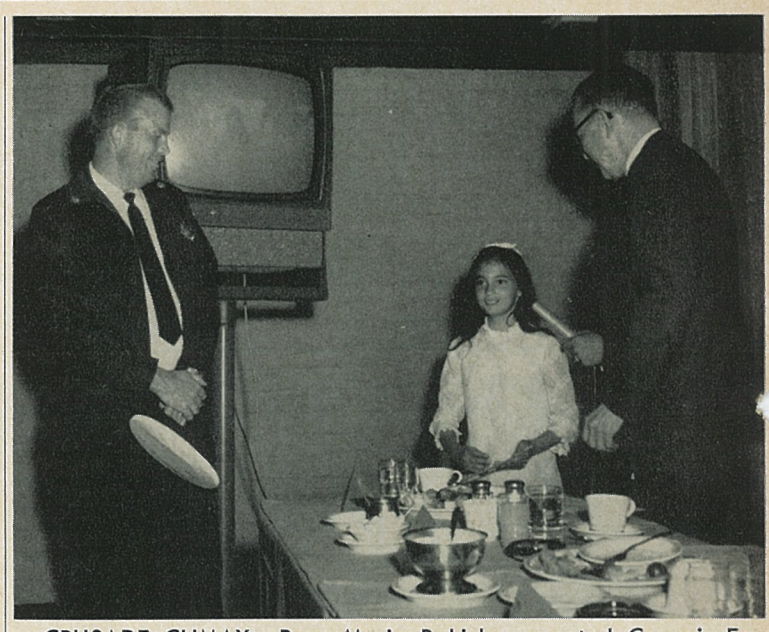
The chapter's charter was presented to Gross by George E. Fairhurst, SOLE national president, and John R. MacFarlane, California director. About 50 members and prospective members attended.

Rear Adm. N. O. Wittman, ComNavAirPac force material officer, spoke on "Logistics support of Naval and Marine aviation in the Pacific."

Chapter membership is open to personnel from all business, industrial, and military organizations who provide product logistics support before, during, and after delivery. Improvement of professionalism in the logistics field is the organization's objective.

Call Gross, ext. 1237 LF, for additional information.

The national SOLE organization is composed of 35 chapters with 3,500 members. The San Diego chapter was the seventh chartered in District 9, which covers the west coast and Hawaii.



CRUSADE CLIMAX—Rose Maria Bakich presented Convair Employes' Con-Trib-Club check for $375,000 to United Crusade at recent luncheon. Accepting for Crusade was Joe Sinnott, head of Crusade's major firms division. Rose Maria's escort for event was Del Dimmitt, left, Convair fire chief and Con-Trib-Club drive coordinator.

Con-Trib-Club Donates $375,000 To Community United Crusade

The Convair Employes' Con-Trib-Club has donated $375,000 to the United Crusade.

A check for that amount was presented to Joe Sinnott, head of the Crusade's major firms division, at a report luncheon at Vacation Village.

The check was presented by Rose Maria Bakich, 11, a sixth grader whose father, George Bakich, is a Dept. 541-0 engineer and a "Fair Share" giver. She arrived at the luncheon in a Convair fire truck with siren wailing, escorted by Convair Fire Chief Del Dimmitt, Con-Trib-Club drive coordinator.

The money represents contributions from 92 per cent of Convair's 14,000 employes.

During October the Con-Trib-Club also granted funds to the following organizations:

United Givers Fund of Huntsville and Madison County, $200; Aseltine School, $2,000; Muscular Dystrophy Associations of America, Inc., $1,500; Volunteers of America, $2,000; Fellowship Center, $1,000; Vandenberg Requests, $3,515, which included grants to the Boy Scouts, Cancer Society, Guide Dogs for the Blind, Salvation Army, Lompoc United Fund and Santa Maria United Fund.

Research and Engineering Adds $1,715,800 Savings During Quarter

(Continued from Page 1)

product design, presented the trophy and certificates in behalf of E. R. Peterson, vice president-research and engineering.

One VECP, credited to Jim Spurgeon of Dept. 511-9 and J. C. Hoover of Dept. 512-1, has resulted in F-111 upper inlet panels being fabricated from sheet metal instead of fiberglass for value improvement estimated at $739,850.

A value engineering team evaluated the VECP and the proposed change was approved by Fort Worth division.

Commendation certificates went to G. R. Dunn of Dept. 511-3 and W. E. Service of Dept. 511-6 for two high-dollar VCPs.

Dunn proposed substitution of precision forgings for machined fittings for DC-10 lower door corners. Estimated savings will be $209,100.

Service suggested a change in bonding procedures for DC-10 cabin floor panels, approved by Douglas Aircraft Co. after a value engineering study, for a $200,500 saving.

A commendation certificate for Ray Schulte, a Dept. 514-0 employe who died Oct. 14, was accepted by a representative from his department. Schulte and three others had arranged for an F-111 part material change that will save $74,000.

Others receiving certificates and savings from their VCPs included:

C. J. Tanner, $64,200; N. G. Fritz, $27,900; D. O. Gerde (with W. J. Durflinger of Dept. 015), $26,200; K. T. Younghusband, $6,900; M. R. Yale, $26,800; R. C. Savary, $9,900; Joe Bradshaw, $39,800; Jack Stringfield, $32,200; Jack Stitt, $30,200; F. N. Bergen, $51,500; Pete Nagy, $14,700; Jack Hotz, $19,000; A. L. Hunter, $9,700; J. D. Rittweger and R. J. Chillo, $35,400.

Frank Fox and Hoover, $94,800; K. R. Lemley (with E. E. Yturralde of Dept. 027), $9,200; J. L. Phipps, $6,900; J. C. Herman, $4,600; George Spanovich, $21,000; Lloyd Curtis and Joe Margole, $10,700; Nick Kourbelas, J. T. Ready, Jim Sproat and Schulte, $74,000; Scotty Young, $3,700; Rittweger, $8,600; and A. W. Grindle and J. E. Whiston, $4,600.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

Q—Shouldn't an Employe Suggestion award be based on the savings formula in effect at the time the suggestion was submitted, rather than the formula being used at the time of the award? In the case of the high speed wind tunnel this could make considerable difference.

A—Award formulas are constantly re-evaluated and in the case of the high speed wind tunnel the formula was changed when it became apparent that awards were unrealistic with reference to actual savings.

★ ★ ★

Q—I understand that National Steel is operating at near capacity and has a requirement for certain engineering and hardware tasks involving LSTs for which Convair has capability. Has subcontracting been considered by either firm?

A—Yes, but to date we have been unable to identify an opportunity where we could be cost competitive.

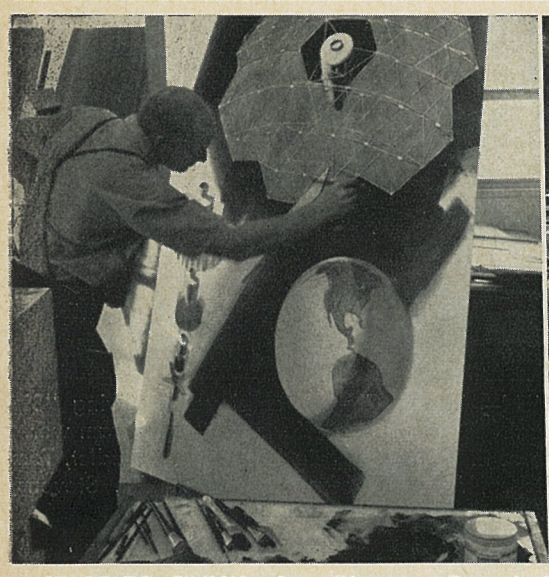
Reduction Offered On Charger Ducats

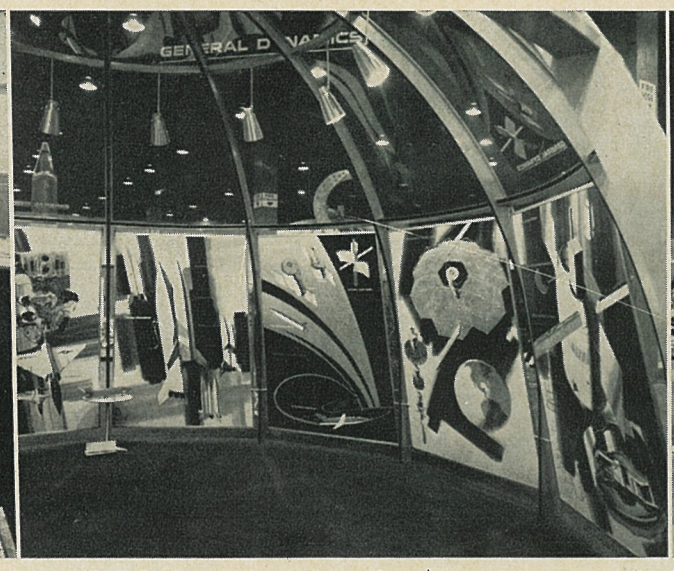
Tickets are still available for the Convair Management Club "Day with the Chargers" football game, Dec. 14, when the Chargers take on the Buffalo Bills and O. J. Simpson.

Tickets are on sale from all club boosters, CRA and employe benefits outlets. On sale are $6 seats for $5.50 and $4.50 seats for $4.10. Proceeds go to the scholarship fund.

MAGAZINE USES CONVAIR POSTER

The cover picture of the October 1969 edition of Industrial Security magazine is a Convair security poster designed by Garry Hamada.







START TO FINISH—Roy Gjertson, Convair Dept. 517-0, is starting place for creation of General Dynamics exhibit for American Institute of Aeronautics and Astronautics meeting and technical display at Anaheim, Calif. last month. Finished product, center, is shown before AIAA meeting opened. In photo at right, hostesses and GD representatives were available at booth to answer questions for visiting delegates. Display is in Bldg. 2 at KM plant.

Fort Worth Mgt. Assn. Awarded Trophy as Best of Kind in U.S.

A new trophy designating the Fort Worth division Management Association "outstanding company club in the nation" has been added to the club's collection and is on display in the plant main lobby.

The annual award was presented at the National Management Association convention in Birmingham recently and was accepted by Past President John Howell. F. E. Chambers, director of industrial relations, represented the division at the presentation luncheon. C. J. Middleton is the current president of the group.

The award was based on points scored for education programs, regular meetings, attendance and civic activities. Points are also gained by plant tours, and publication of a club newsletter.

The Top Company Club title has been earned by the Fort Worth group six times previously, with the last award in 1965. The association earned second place in 1966 and the Excellent Club Award in 1967.

Dennis Chesshir was elected NMA director to replace F. M. Callan, who retired after a three-year term.

Others who attended from Fort Worth included Jim Vaughan, Bob McClean, Fiske Hanley, Bryan L. Murphy, W. R. Ellis, and Gib von Schmittou.

Management Club Presidents Attend Fifth Annual Meet

Representatives of 12 Management Clubs from General Dynamics operating units attended the fifth annual meeting of General Dynamics' Management Club presidents, National Management Association (NMA) directors, and Corporate executives Oct. 23 in Birmingham, Ala.

A. H. Rambeau, Corporate director of management relations and development, discussed responsibilities of club officers to their members, compared management organization and responsibilities between corporations and Management Clubs, and reemphasized that General Dynamics considers participation in Management Clubs important and beneficial to the individual.

The club representatives agreed to exchange newsletters for mutual benefit and discussed club operations, procedures for securing speakers, Management Club contributions to Management Upgrade programs, differences between Company and Management Club training, and NMA procedures and services.

Attending were:

S. W. Botta, Convair-Vandenberg; F. D. Calkins, Pomona; A. Colucci, Quincy; J. E. Cook, Convair-San Diego; N. M. Cooley, Corporate Headquarters; E. E. Creamer, Dynatronics; E. C. Girard, Electric Boat; L. H. Green, Fort Worth-Edwards AFB; F. J. Hickey, Electronics-San Diego; J. H. Howell and C. J. Middleton, Fort Worth; R. M. Mitchell, DatagraphiX; T. L. O'Donnell, Stromberg-Carlson; Rambeau; H. D. Simmons, Electronics-Rochester; R. C. Smith, Electric Boat; H. M. Stupinski, Quincy; J. Wickem, Canadair Ltd. and R. L. Williams, Electronics-San Diego.

Dynamics Represented In NMA 'Hall of Fame'

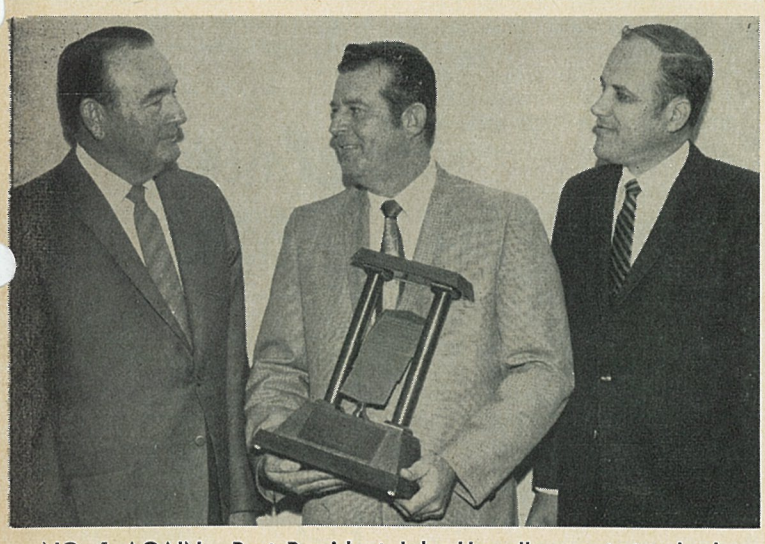
Six General Dynamics' employes — past and present — are pictured in a mural painting in National Management Association's new headquarters in Dayton, Ohio.

The mural was drawn by Ren Briggs and depicts NMA's history from 1925 to 1969.

Among the "history makers" are:

Harry Woodhead, Consolidated-Vultee Management Man of the Year 1944; Tom Girdler, chairman of the board Consolidated-Vultee and Republic Steel; F. M. Callan Jr., Director Zone B vice president 1969.

Wes Magnuson, chairman ad hoc committee; John Payne, general chairman Fort Worth convention; and George O. Watkins, Zone F vice president 1969.



NO. 1 AGAIN—Past President John Howell accepts trophy honoring FW Management Association as No. 1 club in nation. F. E. Chambers, left, director of industrial relations and MA executive adviser, and C. J. Middleton, president, also participate in ceremony.

AIAA Display Highlights Technology

Representatives from Corporate Headquarters and two General Dynamics divisions attended the American Institute of Aeronautics and Astronautics sixth annual meeting and technical display last month in Anaheim, Calif.

General Dynamics' display featured reusable space transprotation systems, space erectable structures, space station experiment modules, and material technology.

Samples of advanced and composite materials, a film on manufacturing processes for advanced materials at Fort Worth division, and photos of products from other divisions also were included.

Richard A. Nau, Convair manager of reusable space transportation systems, delivered a paper on "Advanced maneuvering transportation system technology;" Bruce McKay, manager of military requirements for Convair, chaired a panel on launch vehicles; and Frank Dore, Convair director of space systems, served on a launch vehicle panel.

Among General Dynamics personnel attending were:

Corporate Headquarters—E. H. Heinemann, J. T. Hayward, and L. H. Siennick.

Fort Worth — Frank Davis, Earl Snowdon, J. T. Cosby, O. Duke, and A. Clare.

Convair—E. R. Peterson, F. J. Dore, J. H. Mason, W. W. Withee, Bruce McKay, W. F. Chana, J. W. Maloney, J. A. Fager, J. E. Stumm, R. Garriott, P. A. Bergin, J. R. Hunter, D. J. Chiarappa, J. D. Peterson, E. C. Horbett, R. C. Huyett, E. F. Admiral, C. J. Cohan, D. E. Halford, A. W. Spencer, G. Karel, R. A. Lynch, D. J. Jones, J. M. Wild, R. A. Nau, B. S. Brockett, R. E. Drowns, J. E. Niesley, C. F. Peters, W. A. Roberts, D. W. Vorbeck, D. J. Powell, J. M. McDonald, M. R. Smith, G. E. Taylor, J. T. Hinton, C. L. Hyde, H. D. Girouard, and R. E. Bradley.

Atlases to Be Used In Kwajalein Shots

The Air Force Space and Missile Systems Organization (SAMSO) plans to launch a series of Atlas E and F vehicles from Vandenberg Air Force Base to the Pacific's Kwajalein atoll area during the next two years to test new re-entry vehicles in the Advanced Ballistic Re-entry Systems Program (ABRES).

The Air Force announced the two year program in awarding a support contract to TRW Systems Group's Software and Information Systems division.

The program utilizes modified Atlas missiles which were retired as an operational weapons system in 1961.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Convair Ships More Components For World's Largest Transport

Convair's C-5 empennage program, working under revised delivery schedules, has shipped three more units to the prime contractor, Lockheed Aircraft Co. in Marietta, Ga.

Vertical stabilizers No. 0016 and 0017 and horizontal stabilizer No. 0018 were shipped late in October and early this month aboard a trio of rail cars. The units each make a 2,800-mile journey to the Lockheed Marietta facility.

The C-5 aircraft's revised delivery schedule under which Convair is operating was worked out earlier this year by Lockheed and the Air Force, according to Bob Miller, Convair C-5 program manager. Miller said Convair is affecting a reorientation to match production schedules with Lockheed's new reschedule requirements.

Convair currently ships an average of two complete empennages per month under a subcontract calling for 115 production tail sections for the mammoth transport.

The C-5 empennage program began for Convair in March 1966 with the division delivering the first completed structure, on schedule in October 1967.

Produced at Lindbergh Field plant, the empennages are shipped aboard specially designed hydroshock railroad cars via Santa Fe railway.

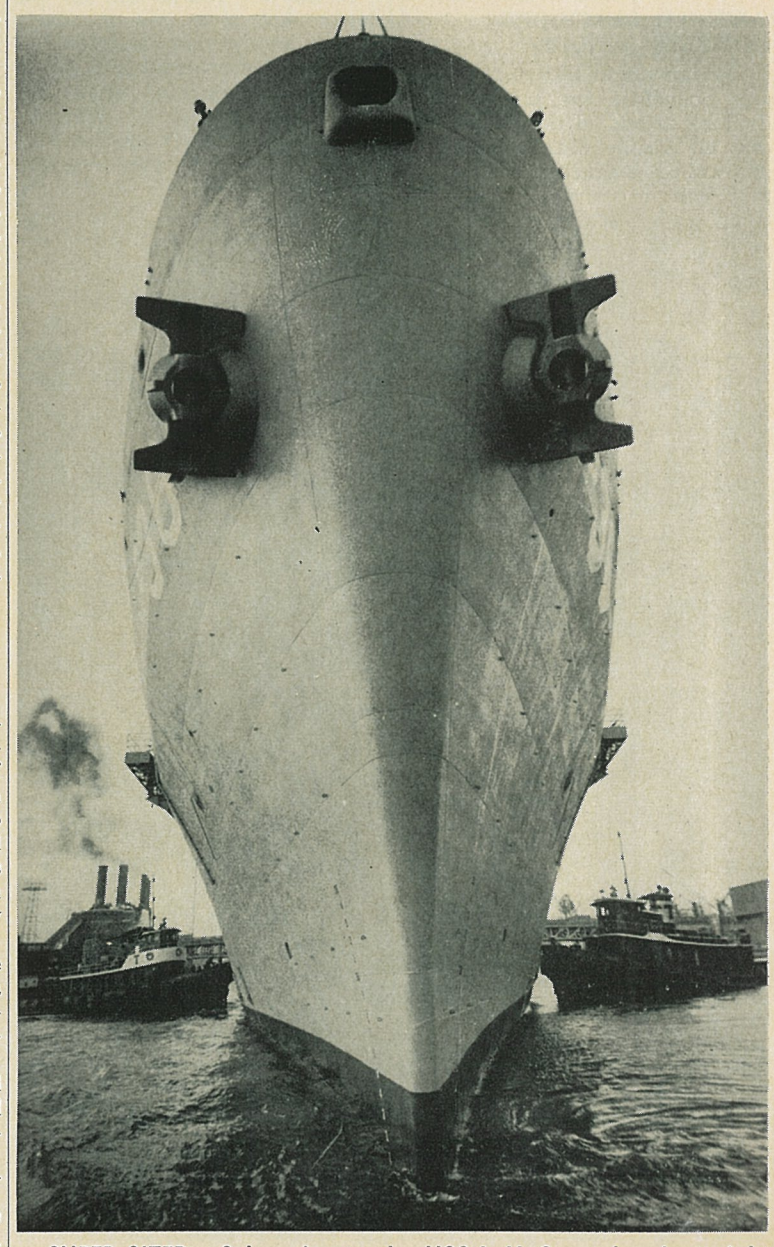
The "T" tail configuration empennages are the largest ever built by Convair and are part of the world's largest transport aircraft. The C-5 is capable of carrying a payload of 132 tons under maximum operating conditions.

Lockheed's finished craft will be delivered to the Air Force for use by the Military Airlift Command.

Society of Ex-Agents Elects Householder

J. V. Householder, security officer in Pomona division's industrial security section, has been elected vice chairman of Greater Los Angeles Chapter, Society of Former Special FBI Agents.

Householder, who is serving this year as secretary-treasurer of the 300-member chapter, will assume his new office in January. He served with Bureau 21 years prior to entering industry with Autonetics in 1963 and coming to General Dynamics in 1964.



SUPER SIZED—Submarine tender USS L. Y. Spear heads straight down lens of camera as she leaves Quincy division and Fore River bridge behind on her way to Massachusetts Bay and builder's trials.



SUPPLIER HONORS—D. C. Prim, right, Electronics-SD manager, presents plaque to L. W. Brownell of Electronic Specialties in ceremony at which five vendor firms were honored for supplying defect-free products to Electronics-SD during six-month period. Others present, from left: Hal Goerge of Defense Contract Administration Services; J. C. Kowalsky, R. H. Nicholson, and F. L. Packard of Electronics-S-D; Robert Bennett and Carl Wellman of Pic Design; Eugene Benoit and J. C. McAdams of International Electronic Research; M. S. Howard of Lyn-Tron. Superior Metal Manufacturing Co. also received plaque.

REINS Assemblers Receive First 'Sustained Performance' Plaque

Electronics-SD's first Sustained Performance Award plaque has been awarded to Dept. 423 Radar Equipped Inertial Navigation System (REINS) assembly area.

D. C. Prim, Electronics-SD manager, presented the award plaque to K. R. Keef, supervisor, and REINS assembly employes in a ceremony Oct. 30 in recognition of their maintaining an average of less than three defects per 100 manhours during the first six months this year.

R. H. Nicholson, manager of quality control, said defects in REINS assembly during the past quarter dropped to 2.2 per 100 manhours.

The award plaque cited Keef and the REINS assembly personnel "for their efforts in maintaining high-quality workmanship."

Prim commended the group for maintaining and improving its performance over last year's record. "This represents good performance—not just luck," he commented. "It's a real contribution.

Fabrication and machine shop (Dept. 422) has been presented Electronics-SD's Zero Defects third-quarter banner award for reducing defects to 5.5 defects per 100 manhours worked.

It was the fourth win for the department since the quarterly banner award was established.

Prim congratulated the fabrication and machine shop employes at an awards ceremony in which the banner was presented and candy and cigars were distributed.

South Mission Crew Wins Over-the-Line

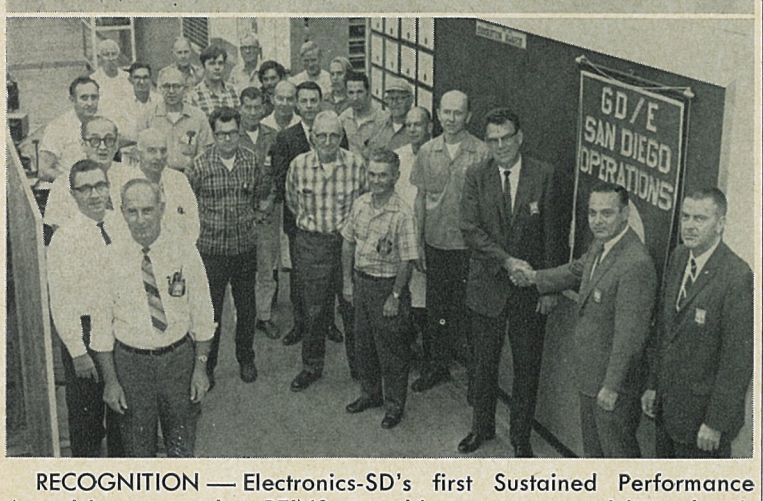
The second annual Over-the-Line tournament held last month was won by the South Mission Crew (SMCs) who defeated the Boogaloos 5-4 in the final game.

The winning team was made up of Harry Van Buren, Harry Van Buren Jr., and Neal Van Buren. Harry Jr. hit five home runs during the course of the tournament.

ARTICLE DESCRIBES CONVAIR SCHOOL

Convair's Non-Destructive Testing School is the subject of a feature article in the October issue of Airline Management and Marketing magazine.





RECOGNITION — Electronics-SD's first Sustained Performance Award is presented to REINS assembly area personnel (top photo). K. R. Keef, supervisor, accepts award plaque from D. C. Prim, center right, Electronics-SD manager. In lower photo, personnel in fabrication and machine shop receive Zero Defects banner for third quarter. Prim, at left of banner, congratulates Jack Murray, general foreman. At right is R. H. Nicholson, quality control manager.

Convair Earns Incentive Fee Of Half Million

Convair has earned a $500,000 incentive fee from the Air Force for achieving 100 per cent flight reliability in 22 consecutive Atlas booster space launches.

Announcement of the award was made by the Air Force Systems Command Space and Missile Systems Organization (SAMSO).

The fee was a feature of an incentive contract awarded Convair in 1965. The 22 Atlas missions began in December 1966 and included a variety of NASA and Air Force spacecraft.

Among the missions were Applications Technology Satellites, Precision Recovery Including Maneuvering Entry (PRIME), Air Force-Agena, Lunar Orbiter, Mariner-Venus fly-by, Mariner-Mars fly-by, Surveyor lunar soft landings, and Orbiting Astronomical Observatory.

Flight performance required the Atlas to place second stages into prescribed trajectories at specified velocities.

Ken Newton, director of Launch Vehicle Programs, said the contract was "our second major venture in the Atlas program with incentive-type goals," and added it was "a challenging contract."

It was the second incentive fee Convair earned with the Atlas. In 1967 "we earned a maximum incentive fee of $3.8 million for exceeding 90 per cent flight reliability and countdown performance in 35 Atlas missions," Newton said.

The overall Atlas space record is 47 consecutive successes since the Gemini program and 96 successes out of 99 launches since 1963.

Veteran Federal Inspector Retires

Joe C. Nemec, who conducted final inspection on the first Atlas sent to Cape Canaveral in 1956, retired recently as supervisory quality control representative for the DCASPRO quality assurance division at Convair after 25 years federal service.

Nemec also was principal inspector for Atlas 10D, the Project SCORE missile that went into orbit Dec. 18, 1958, and broadcast a Christmas message from President Eisenhower through an on-board tape recorder.

He had supervised DCAS operations at Lindbergh Field and Air Force Plant 19 on Crazy Cat, F-102 and F-106 modification, airfield landing mat, and other programs.

Nemec was presented his certificate of retirement by Col. Charles F. Merz, commander of the San Diego DCAS district, and was honored by his colleagues at a "farewell dinner" in the Jolly Ox restaurant.

Wives Club Plans Luncheon Nov. 19

The CRA Wives Club will have a luncheon and business meeting beginning at 11 a.m. Wednesday, Nov. 19, at L'Escale Restaurant, Shelter Island.

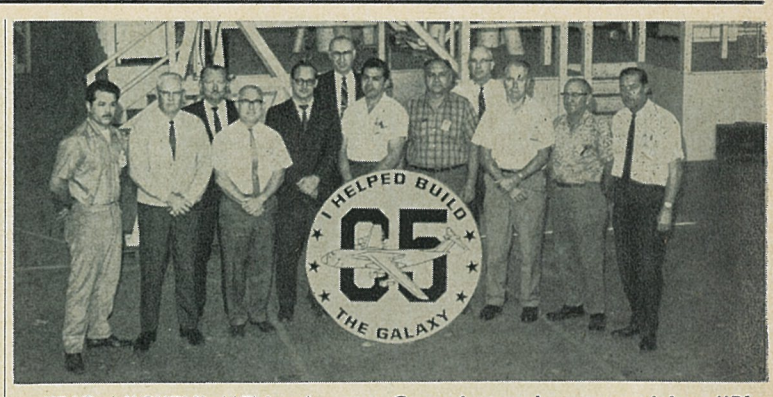
Collette Mitchell of Walker Scott will present a demonstration and talk on women's accessories. Hostesses for the event are Mrs. Marge Allen and Mrs. Anita Klepach. For reservations call Mrs. R. Browning, 295-5369; Mrs. O. Lepper, 296-1106; Mrs. Klepach, 264-1013.

Deadline for reservations is 4 p.m. Monday, Nov. 17.

'Money Drain' Topic For Quality Meeting

The San Diego Section of the American Society for Quality Control will hear Henry Comeau, vice president-marketing, Deutsch Electronics Components, speak on the "Money Drain" at their meeting, 6:30 p.m. Dec. 8 at the Bronze Room, La Mesa.

The meeting is open to the public. For information Call Eric Callard or Sam Petcher, Convair, ext. 2243 KM.



"BIG NICKEL" MEN—Among Convair employes receiving "Big Nickels" for individual cost avoidance efforts in C-5 program were, from left, R. V. Lucero, E. V. Laird, Craig Lent, Jack Benedict, Tom Lumgair, Ben McMicken, M. M. Lopez, G. P. Peck, Jim Stevens, D. R. Wilson, G. F. Reutlinger, and Arling Berg.

20 Convair Men Get 'Big Nickels' For C-5 Program Cost Avoidance

Twenty Convair employes recently were presented "Big Nickel" awards for individual efforts contributing to cost avoidance on the C-5 program during the third quarter this year.

The "Big Nickels" are Lockheed awards, actually medallions closer in size to a silver dollar, that are presented to Convair personnel in recognition of cost saving in the C-5 program.

Receiving the awards from R. W. Miller, Convair C-5 program manager, were:

Al Stieringer, Dept. 002-0; R. V. Leonard, W. G. Lewis, M. T. Musgrove, C. M. Renshaw, and W. F. Sager, Dept. 015-0; Jack Benedict, R. V. Lucero, G. F. Reutlinger, and D. R. Wilson, Dept. 019-0; M. M. Lopez, B. T. McMicken, and G. P. Peck, Dept. 045-0; Sam Witkoff, Dept. 149-0; E. V. Laird and J. A. Stevens, Dept. 202-4; P. A. Knowles, Dept. 400-1; Arling Berg, Dept. 401-4; Tom Lumgair, Dept. 511-7, and Craig Lent, Dept. 860-0.

Miller said Convair has contracted to manufacture 115 empennages (tail sections) for the mammoth Air Force C-5 Galaxy transport. Seventeen production units and two test articles have been delivered.

"Improvements that can significantly reduce cost come, in part, from individual employe constributions," Miller said. "All employes are encouraged to think in terms of how the job can be done better and for reduced costs."

CRA Hawaii Tours To Be Discussed

A meeting to discuss the new CRA Hawaiian travel program will be held at 7:30 p.m. Tuesday, Dec. 2, in the CRA Clubhouse.

Two tours are available at present—a seven-day, three-island tour for $289.95 and a 15-day, four-island tour for $389.95. There are also two Waikiki special tours. Transportation is by Western Airlines. For information, call 1111 KM.

Distaff Golfers Set Xmas Party Date

The CRA Women's Golf Club will hold its annual Christmas Party Tuesday, Dec. 2, at the Valley Ho Restaurant.

The next golf tournaments will be Jan. 10 at Los Penasquitos; Feb. 14, 1970 at Mission Bay; March 14, at Carlton Oaks.

For information on tournaments and club activities call Freda Magargal, ext. 2933 KM.

Navy/Industry Golf Slated for Desert

The annual Navy/Industry Golf Tournament will be Dec. 5 at Palm Springs. The tourney and accompanying banquet are sponsored by the Navy League Western Region Industrial Coordinating Council. Coordinator is Buster Carlson, Convair, ext. 1836 KM.

MISHLER AUTHORS QUALITY ARTICLE

Herb Mishler, requirements assurance administrator for Convair at the Aerfer plant near Naples, Italy, is the author of an article on "Simplified Discrepancy Reporting" in the October issue of Quality Progress magazine.

WRIGHT BROTHERS BANQUET PLANNED

The Wright Brothers Annual Banquet, commemorating the first flight by the Wright Brothers, will be Dec. 5 at the Beverly Hilton Hotel, Beverly Hills, Calif. Convair coordinator is Jean Cooke, ext. 1836 KM.

Club Schedules 4-Day Mexico Desert Campout

CRA Adventurers Club is planning a four-day Thanksgiving trip to Santa Clara del Golfo, a small Mexican fishing village 40 miles below the Arizona border in Sonora, Nov. 27-30.

The Adventurers will drive to Mexicali, south to El Faro, east to Riito, and southeast to Santa Clara, meeting at noon Thursday at the end of the paved road near the schoolhouse.

After lunch, a caravan will form for the seven-mile drive to a campsite near a frontier-type railroad station on a plateau in the Sonora desert.

Petrified wood and prehistoric animal and marine life fossils, buried for years under the shifting desert sand, can be found nearby.

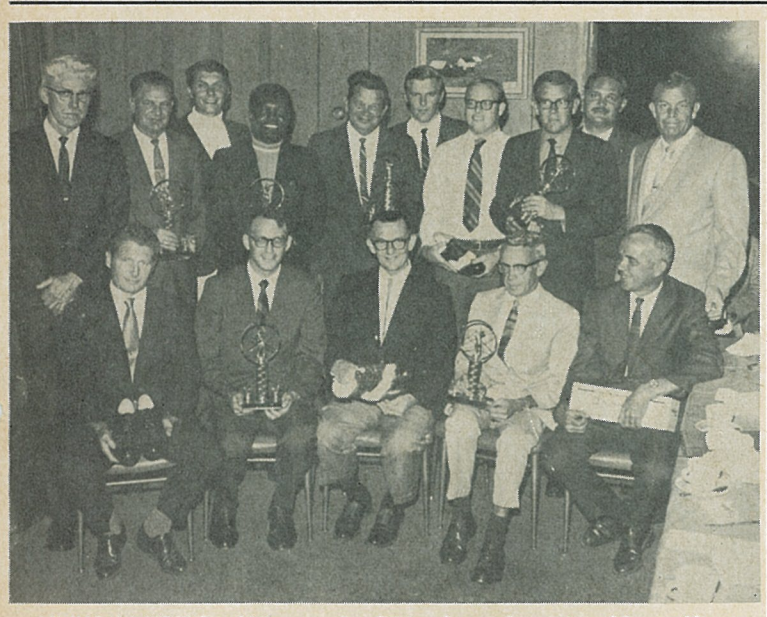
Some of the group plan to roam the desert in four-wheel-drive vehicles while others expect to spend time in and around the village. A group campfire is scheduled each evening.

Those making the trip are being advised to bring water and firewood. Mexican tourist cards are required and auto insurance from a Mexico firm is advised. Gas is available in Santa Clara.

Trip coordinators will be Everett Ames, phone 459-6412, and David Wark, 277-3590.

Color motion pictures will highlight the Adventurers' meeting at 7:30 p.m. Nov. 19 in the CRA Clubhouse auditorium. One, "Tahtonka," emphasizes importance of buffalo to the plains Indians culture. Another shows intertribal ceremonies held annually in Gallup, N.M., and the third is on Indian dances with an Indian chief characterizing dance patterns.





LINKS LAURELS—Winners in CRA plant championship golf tournament, pictured with awards at banquet Nov. 1, are, from left (back row) John Jackman, George Putness, Fred Kunzel, John Doggett, Ed Wargo, Bob Sileneck, Wayne Sanger, Leo Springer, Supervisor of Recreation George Schmiedel, Golf Commissioner Del Dimmitt, and (front row) Bill Carr, Don Kunze, John Lockwood, Paul Williams, and Norm Wylie.

Clutch Putt on Last Hole Wins Title For Doggett

John Doggett of Convair's Dept. 595-0 sunk a winding downhill 20-foot putt on the 18th hole Oct. 25 to edge George Putness of Dept. 102-0 by one stroke for the CRA Golf Club's plant championship.

Doggett received the championship trophy and an entry for the Andy Williams' 1970 San Diego Open at an awards banquet.

Don Kunze of Dept. 526-6, handicap champion, received a set of professional golf clubs and a trophy.

The plant championship was played over three weekends last month on the Rancho Bernardo course with 303 employes competing.

Flight winners, each receiving a trophy and his choice of golf shoes, a golf bag, or a golf cart, were Doggett, Putness, Kunze, Ed Wargo, Fred Kunzel, Paul Williams, and Leo Springer.

Runners-up, each also receiving his choice of shoes, a bag, or a cart, were Bill Carr, Bob Sileneck, John Kintzer, John Lockwood, and Norm Wylie.

Awards were presented by George Schmiedel, supervisor of recreation, and his wife, Jeannie; Tom Champlin, tournament chairman, and his wife, Marion; Del Dimmitt, CRA golf commissioner, and his wife, Velma.

Dimmitt also presented two personal awards to Schmiedel, who had defeated him in the tournament playoffs, to "help further his golfing career." One was a putter outfitted with a compass, hourglass, level, horn, candle, and four-foot ruler. The other was a box of lopsided balls.

Location for the CRA tournament this month, Nov. 29-30, has been changed to Carlton Oaks Country Club in Santee. Starting times can be reserved beginning Nov. 19 by calling ext. 511 LF.

Monthly 'Fun Shoots' Held at Gillespie

CRA Gun Club is sponsoring monthly Convair "fun shoots" at the Gillespie Field range on the last Sunday of each month.

At the October shoot, Ezra Johnson, Dept. 420-1, Dick Blommer, Dept. 780-7 and Lee Cox, Dept. 832-2 were winners in the Quail Walk, Nine-Bird, and Trap and Skeet sections.

The shoot is divided into open and Convair sections. In the open sections, non-Convair personnel can participate but are not eligible for Convair prizes.

Frank Kemper, electronics factory manager and an avid shooter, said the club is actively soliciting families and novice shooters. There are instructors and guns available.

The November shoot will begin at 9 a.m. Nov. 30. For information call Gunner Gatterman, ext. 1861 KM, or Kemper, ext. 1158 KM.

Riding Show Season Ends

The last show of the 1969 Convair Riding Club season was Nov. 2 at the Missile Park arena.

Manager of the show was Clyde Donahue with Shirley Berry, the only woman horse show announcer in San Diego county, as announcer.

Points earned by club members during the show will be used to determine the winner of the annual high point award trophies to be presented at the club's Christmas dinner, Dec. 13.

The club will also present trophies to the high point and reserve champions in equitation and gymkhana for riders not members of the club who have ridden at the Convair ring this year. For information on the club and activities call Judy Watson, 277-0371.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Nov. 24. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting Nov. 19, 7:30 p.m. Santa Clara del Golfo trip, Nov. 27-30.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—University of San Diego 12½ mile ride, Dec. 7, meet at KM parking lot, 2 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting Nov. 16, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COUNTRY & WESTERN MUSIC — Meet each Thursday, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS—Meet tonight (Nov. 12), 7:30 p.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m., meeting 7:30, Nov. 18, Gillespie Field Clubhouse.

GOLF—Carlton Oaks tournament, Nov. 29-30.

GUN CLUB—Fun Shoot, Nov. 30, Gillespie Field gun range, 9 a.m.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Monday through Thursday; 9:30 a.m. to 9 p.m., Fridays; 10 a.m. to 5 p.m., Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd., flat rate fee $1 (includes skates).

JUNIOR SCIENCE — Workshop, Nov. 21, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturday and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Shoot Nov. 23, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Nov. 20, 7:30 p.m.

RIFLE CLUB—Senior shoot, Nov. 12 & 26, 7 p.m.; junior shoot, Nov. 15, 9 a.m.; Gillespie Field Range.

ROCKHOUNDS—Meeting tonight (Nov. 12), 7:30 p.m., CRA Missile Park picnic shelter. Ogilby trip, Nov. 28-30.

SAILING—Meeting Nov. 26, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting Dec. 2, 8 p.m., South Bay Club.

SPORTS CAR CLUB—Meeting tonight (Nov. 12), 7:30 p.m., CRA Missile Park picnic shelter.

SQUARE DANCE—Dance Thursdays, 8-10 p.m.

STAMP CLUB—Meeting Nov. 13, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m. to 4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TRAILERS—Meeting Dec. 2, 7:30 p.m.

TROPICAL FISH—Meeting and workshop, Nov. 17, 7:30 p.m.

WIVES CLUB — Luncheon meeting, Nov. 19, L'Escale Restaurant, 11 a.m. Potluck and craft session Nov. 26, 10 a.m.

WOMEN'S GOLF — Christmas party, Dec. 2, Valley Ho Restaurant.

Program of Mexican Slides Featured

A color slide program highlighting a Mexico motor trip from San Diego will be featured at tonight's (Nov. 12) meeting of the CRA Rockhounds in the Missile Park picnic shelter at 7:30 p.m.

Paul Johnson of the San Diego Gem and Mineral Society will narrate.

A multi-band UVSL-15 mineralight is the evening's special raffle prize.

The club will travel to Ogilby, Calif., Nov. 27-30 for a "Rockhound Roundup" at the Gold Rock Ranch. For information contact J. C. Wilt at 469-2274.



GOLFERS—Freda Magargal takes aim at 18th hole at Kearny Mesa putting green as other members of Women's Golf Club make up gallery. Girls are practicing for upcoming women's golf tournaments. From left are Jeannine Letzring, Joan Sjoblom, Ora Carpenter, May Dean Schell, Irene Wilson and Mrs. Magargal.

Air Explorers and Advisers Plan Raft Trip Down Colorado River

Air Explorers in the Convair Management Club-sponsored Post 397 are learning basics of many aspects of aviation — but their navigating this weekend won't be in the air.

Several of the Explorers and adult leaders will be taking three rafts 50 miles down the Colorado River from Walter's Camp at Picacho.

Twenty new members joined the post at its first meeting this month, bringing total membership to 35.

The new members at the Nov. 20 meeting will begin a year-long aviation training program to prepare them for the FAA written exams. Chris Glaeser and Richard Christ members who recently passed the exam, will assist with training.

Membership in the post is open to boys and girls 14 to 18 years old. Meetings are held the first and third Thursdays each month at CRA's Gillespie Field Clubhouse. During other weeks, Thursday evenings will be used to refurbish the wing structure and cover an Aeronca Champ.

Don Evanson, Convair program manager for Hughes helicopter subcontracts, organized the post with FAA approval 18 months ago and is committee chairman.

Jack Miller is institutional reprepresentative, Jerry Christ is adviser, and Glenn Stamper and Bob Bruce are committee members. Evanson and Miller teach the flight courses with assistance of consultants from Convair, the FAA, and commercial aviation firms.

Each Explorer will plan and make four flights, including one night flight and field trips are scheduled to U.S. Weather Bureau, FAA, Navy and civilian aviation facilities. A glider training program and tours of aircraft plants and aircraft carriers also are planned.

"The idea of the program is not to turn out pilots but to build a good foundation for future careers in aviation or aerospace," Evanson said. "Aviation is still the 'occupation of the future' whether the youth become pilots, maintenance ground crewmen, fixed-base operators, weathermen, or flight engineers. The course helps interest the youth in securing further aviation and aerospace education."

James Thomas Wins In Two Gun Events

CRA Pistol Club shooter James Thomas was a double winner at the club's Oct. 26 matches, winning both Sharpshooter category and Turkey Luck Shoot. His tally of 219 was followed by second place sharpshooter Veronica O'Brien.

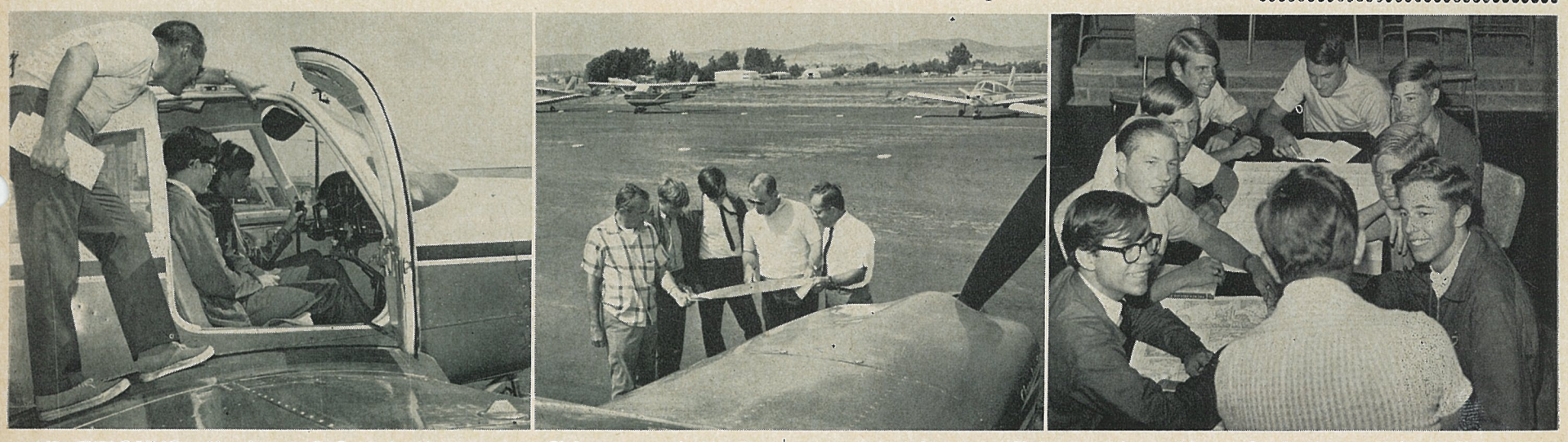
Other matches and winners were: Masters — Dan O'Brien, 291-12x; Roland Schneider, 284-11x. Expert — Charles Kropp, 280-4x; Bud Robinson, 275-3x. Short National — O'Brien, 285; Warren Walker, 277; Schneider, 269; Kropp, 267.

Next match is Nov. 23 at 9:15 a.m. at Police Pistol Range.

Cyclists to Pedal To U. of San Diego

The CRA Bicycle Club will take a 12½ mile ride Sunday, Dec. 7, from the Convair Parking Lot at Kearny Mesa to the University of San Diego. Riders will meet at 2 p.m. Ride leader is Carol Lukens. For information call Dave Lukens, ext. 2881 KM.

You Can Become Regular Bond Buyer For 50 Cents a Week



AIR EXPLORING—Members of Convair Management Club-sponsored Air Explorers Post 397 combine study with flights and field trips. In left photo, Jack Miller briefs Richard Christ and Chris Glaeser on aircraft controls; center photo shows Don Evanson, Glaeser, Richard Christ, Miller, and Jerry Christ making flight plans; at right, Jerry Christ provides guidance for Explorers Richard Christ, Mike Eichmeyer, John Callaway, Steve Stamper, James Warn, Chris Glaeser, Chuck Holden, and Steve Glaeser. The 35 member post meets at CRA's Gillespie Field Clubhouse the third Thursday each month.

When Auto Fails Him, Assembler Starts 20-Mile Hike to Plant

You might say M. D. Slayton went "above and beyond" to keep his perfect attendance record intact.

The Fort Worth division Dept. 52 assembler's car broke down in Mansfield one night while he was visiting a sick relative.

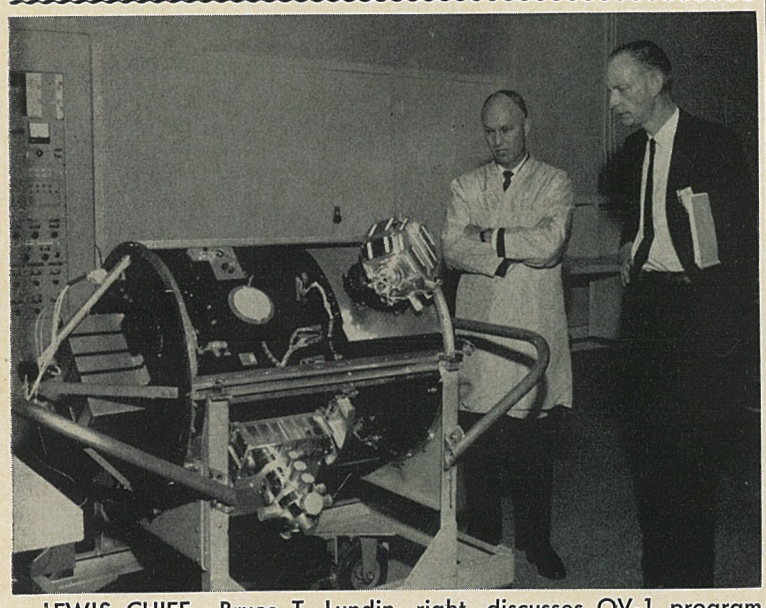
Slayton spent the "night" with the relative. At 3 a.m. the next morning, he started the 20-mile trip from Mansfield to the plant—on foot! Since he's on a 10-hour shift, he has to get to work at 5 a.m.

Slayton had walked over eight miles when a fellow first-shifter gave him a lift to the plant.

"What would you have done if you hadn't gotten a ride?" asked his general foreman, Ray Kendall.

"I guess I'd have walked all the way," Slayton said. "I had planned to, anyway."

"That," said Kendall in understatement, "is real devotion to duty."



LEWIS CHIEF—Bruce T. Lundin, right, discusses OV-1 program with Vern Ottem, project manager, during past visit to Convair. Lundin has been named new head of NASA Lewis Research Center.

Dr. Silverstein Retires As NASA Center Director

Dr. Abe Silverstein has retired as director of NASA's Lewis Research Center in Cleveland, Ohio. He is succeeded by Bruce T. Lundin, former acting associate administrator for the Office of Advanced Research and Technology in NASA Headquarters.

In making the announcement, Dr. Thomas O. Paine, NASA administrator, said "Few have made so great a contribution to our national space effort as Dr. Silverstein. We will miss him."

Dr. Silverstein said that "As NASA engages in its second ten-year program, it may be important that the men whose decisions initiate the new long range projects be available to complete them. Since I do not think I can stretch my 40 years of service into 50, it is perhaps best for me and the Lewis Center if I bow out now."

Dr. Silverstein added "I intend to continue an active professional career and hopefully direct my talents into challenging areas adjacent to those in which I have been engaged."

Lundin, a native of Alameda, Calif., and a 1942 graduate of the University of California, began his scientific career with the National Committee for Aeronautics in 1943 at Lewis Research Center.

In 1946 he was placed in charge of the Jet Propulsion Research Section and in 1952 was appointed chief of the Engine Research division. In 1958 he was named assistant director of Lewis Research Center.

In 1968 Lundin went to NASA headquarters to become deputy associate administrator for the Office of Advanced Research and Technology. He became acting associate administrator earlier this year.

Lundin is a member of Tau Beta Pi, Sigma Xi, an Associate Fellow of the American Institute of Aeronautics and Astronautics, and a Fellow of the Royal Aeronautical Society. He is also a member of several governmental advisory committees, including the NASA Aerospace Safety Advisory Panel, the Scientific Advisory Board of the Air Force, and the NASA Research Advisory Committee on Space Vehicles. In 1965 he was the recipient of the NASA Medal for Outstanding Leadership.

The Lewis Research Center is responsible for the Centaur program. Convair has recently won a $25 million contract to develop an Improved Centaur.

NASA Medals Awarded Two Men For Bravery

Two Convair Eastern Test Range (ETR) employes have been awarded the NASA Medal for Exceptional Bravery in ceremonies in Washington, D.C.

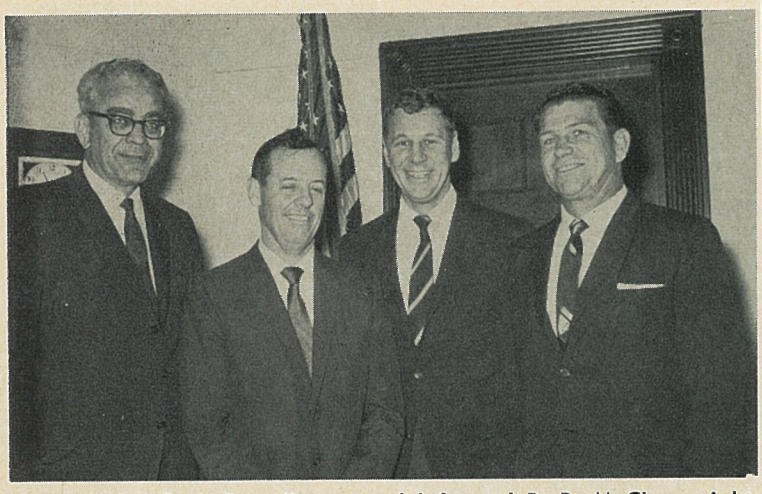
The medals were presented to Charles J. Beverlin and Billy B. McClure in "recognition of their courageous actions in preventing a catastrophic depressurization of the AC-19 booster."

AC-19, scheduled to launch Mariner 6 last February, was undergoing pre-flight propulsion systems tests when a malfunctioning valve caused a serious drop in pressure.

Acting instantly and "at considerable personal risk," the two men climbed part way up the launch tower and shut off valves, thereby avoiding a complete pressure loss.

The awards were presented at the NASA annual awards day by Dr. Thomas O. Paine, NASA administrator.

The men had previously been honored by Convair in ceremonies at ETR when General Manager Jack L. Bowers presented them with letters of commendation and $1,000 Savings Bonds. They were also given a trip to JPL to observe the Mariner-Mars fly-by.



HEROES—C. J. Beverlin, second left, and B. B. McClure, right, were honored recently in Washington by NASA for saving AC-19 Atlas booster from inadvertently depressurizing during tests last February. With the men are Ken Newton, left, director of launch vehicles, and Congressman Louis Frey Jr., (R-Fla.) whose district includes ETR.

Deadline Near For Decision On '66 Savings

Members of the Savings and Stock Investment Plan who have been in the Plan since 1966 were reminded this week that they must decide prior to Nov. 27, 1969, whether or not to withdraw their 1966 accounts (valued as of Dec. 31, 1969) or defer distribution.

Current federal income tax laws provide for different tax treatment covering a present withdrawal of 1966 funds and a deferred withdrawal of 1966 funds. On a current withdrawal, any gain would be treated as an addition to 1970 ordinary taxable income, and any loss could be taken as deduction. However, if 1966 funds are not withdrawn until retirement, the amount of taxable income would be treated as a long term capital gain.

In order to determine the exact amount of taxable income reportable in the event of withdrawal, members are advised to refer to the tax worksheet distributed annually by industrial relations.

It should be noted that the above is based upon current federal income tax laws and regulations without regard to proposals now before Congress, or any subsequent changes which might be enacted. The decision to withdraw or defer is a personal one and immediate financial needs should be weighed against the desire to build up a larger retirement estate.

★ ★ ★

Enrollment in General Dynamics Savings and Stock Investment Plan is open this month for new members or changes in options.

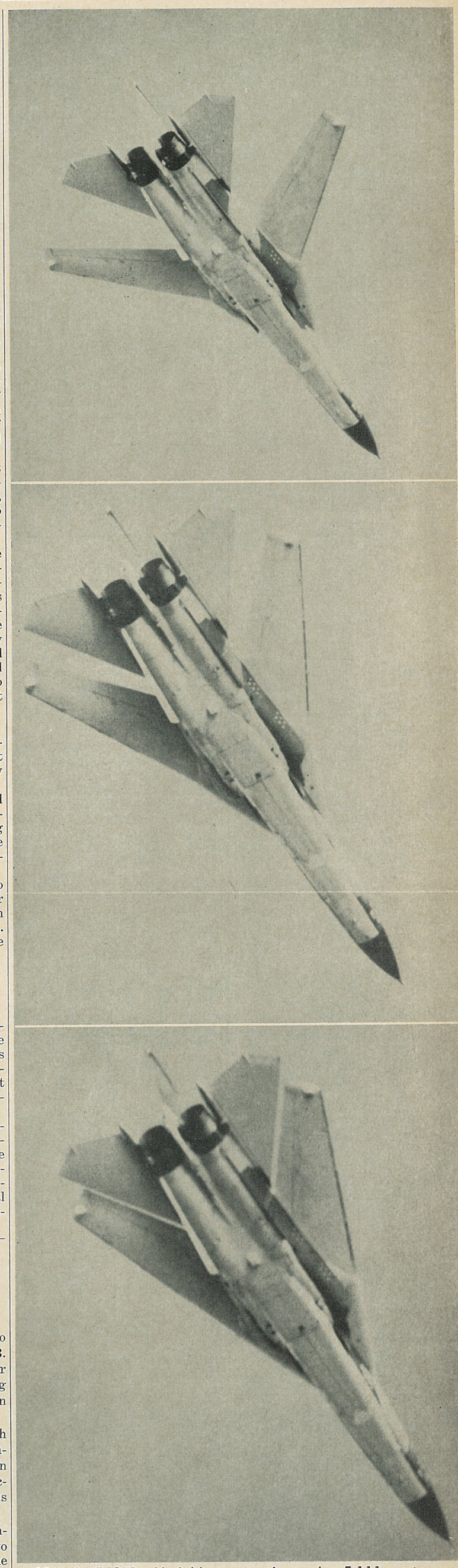
Employes who have established eligibility by being with the company a full year can sign during November for membership to be effective for the quarter beginning Jan. 1, 1970.

Present members wishing to change their investment option or percentage of savings also can make application this month. Forms are available at employe services offices.

Bill Brown to Chair Committee of AIA

Bill Brown, Convair Dept. 567-0, was elected chairman of the Technical Contract Requirements Committee (TCRC) of the Aerospace Industries Association at the annual meeting in San Francisco.

Purpose of the TCRC, comprising representatives from 46 aerospace contractors, is to coordinate requirements of government documents which are applied to contracts and which contain technical as well as management requirements.



REAL SWINGER—Variable-sweep wing makes F-111 most versatile production aircraft ever built. At 10,000 feet, pilot can sweep wings from 26 to 72 degrees in slightly over 15 seconds, literally changing aircraft's "design" in flight. With wings forward, F-111 can take off and land in as little as 2,000 feet—even on sod runways. In supersonic posture—with wings fully swept—the F-111 can exceed Mach 2.2 at altitude and fly supersonically "on the deck."

Galaxy Featured In Air Force Film

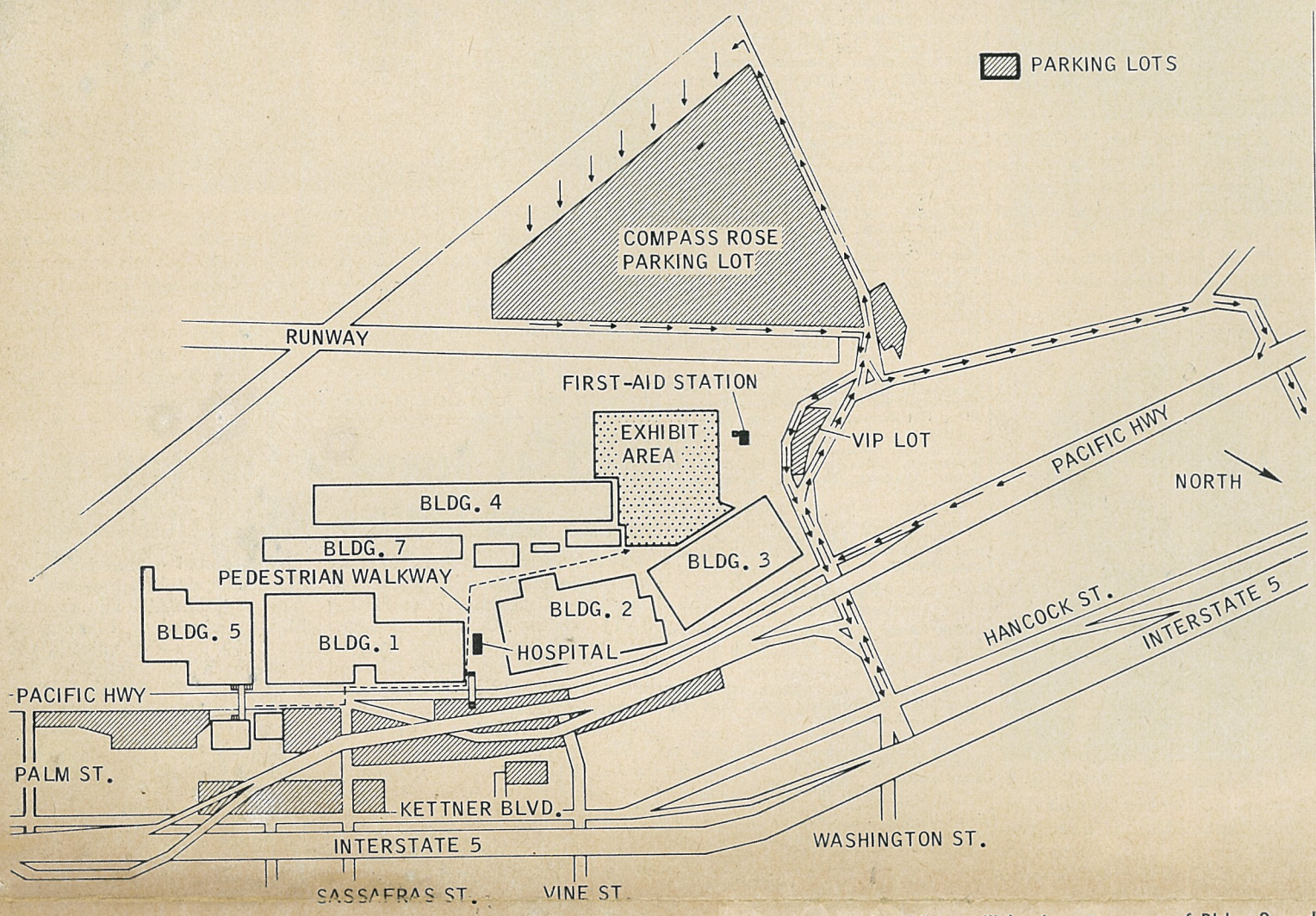
Convair and the C-5 empennage it manufactures are part of an Air Force documentary entitled "C-5 Galaxy, World's Largest Aircraft." The film is available for loan from the Air Force and can be obtained from the nearest AF Base film library.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 3, 1969

Families and Public Invited to LF Plant



ENTRY PROFILE—Arrows show routes to be followed by autos at Lindbergh Field via Washington Street and by pedestrians entering plant from Pacific Highway for Products Display show Saturday. Displays and exhibits will be in area west of Bldg. 3 and north of Bldg. 4. Atlas and Centaur space launch vehicles, the giant C-5 empennage and other products will be displayed.

★ ★ ★

Products On Display Saturday

Convair division products will be on display for General Dynamics families and the people of San Diego from 9 a.m. to 5 p.m. Saturday at the northwest end of the Lindbergh Field plant. The event will be part of San Diego's 200th anniversary celebration.

Among exhibits will be F-102 and F-106 fighter aircraft, Atlas and Centaur space launch vehicles, an Orbital Vehicle-1 satellite, a C-5A Galaxy empennage, F-111 aircraft parts and assemblies, ocean data station Bravo, and electronic products.

Doors to Bldg. 3 will be open to permit viewing of DC-10 trijetliner fuselage assembly areas. Also displayed will be the NASA "Craftsman Ship," a trailer filled with exhibits from the Apollo program; a Surveyor spacecraft display from Jet Propulsion Laboratory; and Convair historical and future-program exhibits.

Highlighting the day will be ceremonies at 1 p.m. in which Maj. Gen. Louis L. Wilson Jr., vice commander of the Air Force Space and Missile Systems Organization, Air Force Systems Command, will present the Air Force Sustained Performance Craftsmanship Award to the division.

Jack L. Bowers, Convair division president, will accept the award for division employes. NASA will be represented by Earle J. Sample, director of the NASA Pasadena office.

The U.S. Marine Corps Recruit Depot band will present a concert. Other speakers at the ceremony will include Mayor Frank Curran of San Diego and Charles Cordell, president of the city's 200th Anniversary celebration.

All regular parking areas at the Lindbergh Field Plant will be open. In addition, the San Diego Port Authority and the Marine Corps Recruit Depot will make parking areas available.

Displays and exhibits will be set up in the area west of Bldg. 3 and north of Bldg. 4 at LF. Entry will be through the north flight gate at the northwest end of the plant for those parking at Compass Rose and the Marine Corps Recruit Depot and through the guard station adjacent to Overpass 2 for those parking along Pacific Highway.

Convair Dental Plan For Salaried To Go Into Effect Without Sign-up

The Convair division Salaried Employes Dental Plan will go into effect Jan. 1, 1970.

All salaried employes and their dependents, regardless of participating in the Group Medical Plan, will be covered without having to sign up specifically for the plan.

There is a $25 deductible for each member of the family using the plan, with a maximum deductible of $75 per family per year.

After the deductible, payment of dental expenses will be according to a schedule designed to pay about 90 per cent of most covered dental expenses, and 50 per cent with respect to inlays, gold fillings, crowns, including precision attachments for dentures, and fixed bridgework.

Paul Allgire, supervisor of employe benefits, stressed that employes should determine in advance what dental procedures are covered under the plan and which are not.

Some of the covered expenses are:

Office visits, $4.50; special consultation, $12; single x-ray, $4.50; entire denture series, consisting of at least 14 films, $17.50; uncomplicated single extraction, $9; post-operative visit, $3.50; filling a cavity involving one tooth surface, silver filling, primary teeth, $7; two tooth surfaces, $10.50; three or more tooth surfaces, $14; filling a cavity involving one tooth surface, silver filling, permanent teeth, $10; two tooth surfaces, $13.50; three tooth surfaces, $18.

There are some limitations and exclusions in the plan.

For example, charges for any service or supplies which are for orthodontic treatment, including correction of malocclusion, are excluded unless specifically provided for in the schedule of covered dental expenses.

Also there is no payment for charges for any dental procedure that is covered under the basic or major medical plan. For example, if teeth are injured or affected in an accident, this is covered under major medical and

(Continued on Page 2)

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Some questions, as well as answers, have been shortened to meet space requirements. In most cases, replies to individuals by mail are in considerably more detail.)

Q—Why are discount tickets offered in-plant generally limited to sports events, ice shows and movies? Why not plays and concerts, too?

A—Ticket policies are based on past experience and tend to favor events for which admission is in greatest demand. Discount coupons, however, are available for many cultural events. For example, in November these included Old Globe, Civic Theatre and Electric Home and Appliance Show.

★ ★ ★

Q—It would be helpful if group insurance identification cards could be issued to participants. My daughter was injured while we were on vacation and lack of identification caused considerable delay in hospital admittance.

A—Medical identification cards have been ordered and will be distributed starting this week.

★ ★ ★

Q—In May Convair announced that a Dental Plan for salaried was in the offing and details would be forthcoming. When will we hear?

A—Details are covered in this issue of *GD/NEWS*. Much time and effort have been devoted to formulation of the Dental Plan to assure that it is among the very finest in our industry.

(Continued on Page 2)

Product Show To Open at 9

Following is the agenda for the Products Display show Saturday (Dec. 6) at Convair division's Lindbergh Field plant:

9 a.m.—Display area opens to public.

12:30 p.m.—Concert by Marine Corps Recruit Depot Band.

1 p.m.—Award ceremony.

Opening remarks by W. E. Magnuson, master of ceremonies and chairman, Convair Craftsmanship program.

Charles Cordell brings welcome from San Diego 200th Anniversary committee.

Mayor Frank Curran presents greetings from City of San Diego.

Maj. Gen. Louis L. Wilson Jr., vice commander, Air Force Space and Missile Systems Organization, presents Air

(Continued on Page 2)

Participation in Award Acceptance Urged

This Saturday's activities are doubly important to us. Not only are we putting our major products on display for our families, friends, and the community, but we are also going to receive the Air Force's Sustained Craftsmanship Performance Award.

Maj. Gen. Louis Wilson, vice commander of SAMSO will make the presentation in ceremonies at 1 p.m.

As you know, we set this as a prime division objective for 1969, and all of us have worked hard to win.

I'm proud of our efforts—only nine other divisions in the United States have ever qualified for the award.

I encourage each of you to bring your families and join me in accepting the award.

Jack L. Bowers
President

Log Book Entries



FORTY-YEAR MAN—Ed Raymond, a tool engineer in Convair division's Dept. 400-0, recently received pin for 40 years service with company from Jack L. Bowers, division president. Raymond joined Consolidated Aircraft in Buffalo, N.Y., as a sheet metal worker in 1929, moved to San Diego with the firm in 1935, and served as superintendent of fabrication for New Orleans division during World War II. He has been back in San Diego since 1945 and with tooling department since 1950.

Service Emblems

CONVAIR

Service emblems due between Nov. 16 and Nov. 30.

Forty-Year: Dept. 400-1, Edward L. Raymond.

Thirty-year: Dept. 027, W. B. Boosen; 049, A. Kolodziej; 509, F. D. Applegate; 519, H. E. Ray; 569, W. C. Gilger Jr.; 572, S. R. Carpenter.

Twenty-five year: Dept. 027, O. J. Anderson; 401, K. B. Offerman; 420, Lynn A. Johnson; 761, W. F. Heflin.

Twenty-year: Dept. 046, B. C. Simmons; 057, R. E. Coleman; 581, R. A. Lynch; 831, L. R. Potter; 833, Lillian H. Brown.

Fifteen-year: Dept. 002, L. E. Homer; 046, C. G. Smith; 113, F. M. Castro; 149, R. A. Snyder; 506, L. G. Chase; 553, T. J. Mawson, D. V. Quinby; 583, E. C. Laudeman; 587, J. F. Fischer Jr.; 835, A. H. Drown; 840, Florine D. Utz; 962, D. E. Merriam.

Ten-year: Dept. 001, D. L. Breese; 015, W. C. Parker; 101, R. Hughes, Dorothy E. Maupin; 113, Mary A. Gay; 131, Evelyn Y. Christopoulos; 400, R. Kemp; 554, W. S. Cushman; 731, T. M. Parmarter; 732, L. L. Gallagher; 802, H. K. Soper Jr.; 833, Mary R. Knost; 836, R. E. Nolin; 979, S. D. Carlile; 985, D. A. Patterson.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Nov. 7.

Dept. 015, A. W. Beckman, $15; 001, R. N. Bishop, $30; 015, K. W. Camp, $20; 027, W. R. Cashman, $41; 733, N. Chaudoin, $147; 400, J. K. Clevenger, $54; 519, J. J. Cocca, $57.60; 149, J. H. Galvin, $73.40; 519, C. Greve Jr., $15; 143, M. M. Henry, $147; 142, A. G. Infeld, $15; 519, H. Mattes, $277.50; 515, J. M. McSorley, $224.35; 515, J. R. Paterson, $224.35; 027, L. Peralta, $105.30; 250, J. A. Riehl, $1,481.40; 027, F. J. Serio, $15.50; 149, J. F. Taylor, $15; 027, W. L. Worthington, $20.30.

Employe Suggestion awards approved for the week ending Nov. 14.

Dept. 001, D. Arena, $15; 574, A. Aron, $22; 019, J. Banuelos, $23.70; 015, H. E. Beard, $15; 401, H. B. Bishop, $75.50; 250, R. L. Brehl, $44.50; 401, G. Buono, A. J. Dadisman, $7.50 each (joint award); 250, W. E. Burnett, $25; 130, M. H. Carter, $15; 059, E. M. Christensen, $87.30; 143, A. M. Contreras, $25; 780, C. M. De La Bretonne, $18.80; 400, C. A. Detty, $115.90; 562, M. D. Dickey, 842, H. W. Fuller, $1,035.65 each (joint award); 780, T. C. Eckles, $62.50; 962, R. A. Freedman, $15.

Dept. 524, C. M. Gilliland, $15; 780, C. M. Johnson, $15; 142, L. E. Johnson, R. N. Rogers, $25.65 each (joint award); 519, J. H. Kersey Jr., 001, B. T. Robinson, $7.50 each (joint award); 985, R. W. Lee, $15; 985, S. F. Lopez, $15; K. D. Millard, $48; 595, N. G. Reiter, $47.10; 142, R. N. Rogers, $22.70; 027, A. W. Sandsten, $15; 143, D. T. Santos, $207.30; 985, R. J. Simon, $15; 015, G. Torres, $15; 780, M. L. Underwood, $115.30; 045, R. F. Yturralde, $15; 780, S. W. Zeiss, $15; 027, H. M. Zeno, $48.60.

Employe Suggestion awards approved for the week ending Nov. 21.

Dept. 130, E. G. Addison, $16; 001, J. B. Bence, J. W. Weisman, $7.50 each (joint award); 045, J. J. Boyer, $15; 401, R. D. Bunzow, $15; 731, M. Carmichael, H. C. Leoncini, $7.50 each (joint award); 027, L. Castro, $15; 143, R. W. Coomes, $36.80; 031, D. R. Davis, $15; 401, H. F. Davis, $15; 401, W. L. Duncan, $15; 020, R. F. Friar, $95.70; 144, J. R. Frogge, $85.30 (three awards); 144, J. J. Gallant, $158.70; 053, M. Grega, $15; 519, N. W. Jones, $56.50.

Dept. 146, R. B. Kalanquin, $212.30; 016, J. R. Kinley, $15; 143, S. R. Kirchmann, $32; 250, G. J. Kleber, $15; 565, J. J. Letzring, $15; 015, R. E. Lewis, $15; 149, T. W. Luers, $51.20; 130, W. L. May, $15; 401, J. F. McConnell, $37.50; 131, J. Medina, $15; 015, J. A. Mikkelson, $15; 140, J. J. Ridley, $51.80; 401, T. D. Schirtzinger, $38.90; 985, E. M. Van Huss, $15; 027, K. R. Waldrop, $15; 027, J. Ward, $15; 574, J. W. Weaver, $15; 979, A. O. Weinberg, $23.80; 027, W. B. Williamson, $15; 015, W. L. Woodward, $15; E. E. Yturralde, $35.10.



MILESTONE — William J. Gramse, leadman in Convair division's Dept. 001, has been presented pin for 35 years service. He joined Consolidated Aircraft in 1934 in Buffalo and has held a number of positions in sheet metal.

Retirements

CONVAIR

APPERSON — Bob J., Dept. 552. Seniority date Jan. 12, 1961, retired Oct. 31.

BENTLEY—Alphus A., Dept. 832-5. Seniority date Sept. 13, 1956, retired Oct. 31.

BLAKE — Walter E., Dept. 144-4. Seniority date March 20, 1951, retired Oct. 31.

BLUMENTHAL — Edgar M., Dept. 731-0. Seniority date Sept. 22, 1958, retired Oct. 31.

BYLE — Frank Sr., Dept. 002-0. Seniority date April 14, 1955, retired Oct. 31.

CAREY — Carl V., Dept. 452. Seniority date July 21, 1955, retired Oct. 31.

COOK — Paul V., Dept. 400-1. Seniority date Sept. 22, 1947, retired Oct. 31.

DAVIS — William E. Jr., Dept. 144-4. Seniority date April 19, 1967, retired Oct. 31.

GARDNER — Arthur L., Dept. 250-6. Seniority date Oct. 9, 1944, retired Oct. 31.

MOORE — Stewart C., Dept. 732-0. Seniority date June 10, 1940, retired Oct. 31, 1969.

NICHOLS — Beulah H., Dept. 016. Seniority date June 16, 1950, retired Oct. 31.

OSBORN — Mansfield G., Dept. 031-0. Seniority date Sept. 15, 1941, retired Oct. 24.

PAGLIUSO — Frank, Dept. 015-0. Seniority date May 21, 1946, retired Oct. 31.

REED — Lyle L., Dept. 999. Seniority date Sept. 29, 1947, retired Oct. 31.

Lost & Found

CONVAIR

FOUND—Ring and watch on Sassafras Street near LF plant. Phone Bill Lakin, ext. 2042 LF.

Deaths

CONVAIR

ANDRESS—A. E., Dept. 999-0 (formerly 150-0), died Oct. 24; survivors include his wife, Margaret, and a daughter, Mrs. Penelope Baker.

BARNHARD — Virgil R., retired Dept. 129, July 22, 1961, died Nov. 5. Survivors include two daughters, Donna Hogarth, Zelma Allen.

HASH — Cecil H., retired Dept. 201, Oct. 11, 1961, died Nov. 11. Survived by his wife, Alma.

LONG — Horace W., retired Dept. 25-1, Nov. 25, 1960, died Nov. 11. Survived by his wife, Flora.

VILARDI — Blanche C., retired Dept. 015, March 31, 1969, died Nov. 9.

WALLER — Laurel Scott, retired Dept. 116, July 31, 1961, died Nov. 3. Survivors include two sons, John and Jesse.

WRIGHT — Herman J., retired Dept. 25, Jan. 25, 1961, died Nov. 5. Survived by his wife, Erie.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Papers Presented

CONVAIR

ANDERSON — R. T., T. J. DeLACY, Dept. 572. Nondestructive Testing of Thermal Protection Systems for Re-entry Vehicles." American Society for Nondestructive Testing, Philadelphia, Pa., Oct. 13-16. And "Applications of Nondestructive Testing for High Modulus Composites." ASTM Symposium on Nondestructive Testing of Composites, Detroit, Michigan, Oct. 29.

BRAZELL — R. R., Dept. 592. "Don't Just Sit There . . . The Psychological Aspects of Survival in Civil Aviation Accidents." Safe National Conference, Las Vegas, Nevada, Oct. 27-30.

CHRISTIAN — J. L., Dept. 572, J. D. FOREST, Dept. 512. American Society for Metals, Metals Park, Ohio, Oct. "Aluminum-Boron Composite Pass Tests in Full-Sized Aerospace Structure." And "Development and Application of High Matrix Strength Aluminum-Boron."

COOPER — A. H., Dept. 589. "Survivability of Military V/STOL Transport Aircraft."

HAZELRIGG — G. A., Dept. 583. "An Analytic Solution for Constant-Thrust, Optimal - Coast, Minimum - Propellant Space Trajectories." 20th Congress of the International Astronautical Federation, Mar Del Plata, Argentia, Oct. 5.

HERSH — M. S., Dept. 572. American Welding Society, New Orleans, La., Oct. 6-9. "Resistance Spot Welding of Metal Matrix Composite." And "Effect of Discontinuities on Fatigue Properties of Aluminum Welds."

NAU — R. A., Dept. 581. "Advanced Maneuvering Transportation System Technology Requirements." AIAA 6th Annual Meeting, Anaheim, Calif. Oct. 20-24.

SHIH — K. T., Dept. 596. "Electrode Erosion in High-Current Electric Arcs." Symposium on Physics of High Pressure Arcs, Gatlinburg, Tenn., Oct. 28-29.

SMITH — C. R., Dept. 587. "Effective Stress Concentrations for Landed Structures." Society for Experimental Stress Analysis. Houston, Texas, Oct. 17.

WALTER — R. K., Dept. 454. "A Customer Discusses Airborne Static Power Conversion." IEEE-Industry & General Applications Group, Detroit, Michigan, Oct. 13.

Personals

CONVAIR

The family of Floyd A. White gratefully acknowledges your kind expression of sympathy.

* * *

The family of Robert Reichardt gratefully acknowledges your kind expression of sympathy.

* * *

Your kind expression of sympathy is deeply appreciated and gratefully acknowledged.

Mrs. James J. Van Daele

* * *

Your kind expression of sympathy is deeply appreciated and gratefully acknowledged by the Blessing family.

Dental Plan Begins Jan. 1

(Continued from Page 1)

would not be covered under the dental plan.

This means that if a dependent is not enrolled in the major medical plan and has teeth injured in an accident, the dental plan will not cover the injury.

The maximum benefit for each individual covered is $7,500 for all years combined, but not more than $1,200 in any calendar year.

An information booklet containing a complete schedule of payments will be distributed to all Convair salaried employes around Jan. 1.

For information call Convair employe benefits, ext. 3363 KM.

Product Show Opens At 9 a.m. Saturday

(Continued from Page 1)

Force Sustained Craftsmanship Award.

Jack L. Bowers, Convair division president, accepts for division.

Earle J. Sample, director, NASA Pasadena office, extends NASA congratulations.

5:00 p.m.—Display area closes to public.

Gift Items on Sale At Bargain Rates

Christmas gift items are on sale at CRA and employe benefits outlets.

Included are passcase billfolds, $1.75; perfume, $1.75; watch band calendars, $1.25; red and blue chromatic pens, $1.10; refills for pens, 25 and 50 cents; stainless steel knives, $5; Zippo lighters, $3; butane lighters, $5; binoculars, $29; Shaffer pens, 60 cents; pearls, $17; earrings, $4; Apollo color slides, $3.15; Apollo 8mm color film, $8; chrome pen and pencil sets, $9.10; gold pen and pencil sets, $14.40.



ENGINEERING CRAFTSMEN—Instrumentation systems (Dept. 544-4) at Lindbergh Field received Convair research and engineering department third-quarter Craftsmanship Achievement banner for outstanding performance in flight instrumentation recovery and work toward other objectives. Lyle McClain, group engineer, center, received banner and certificate from F. D. Applegate, director of product design. Others, from left, are Warren Walker, E. J. Beveridge, Bob Dunn, Hoyt Jeter, F. J. L'Heureux, Dennis Hyland, Paul Johnson, and John Lievens (assistant chief engineer).

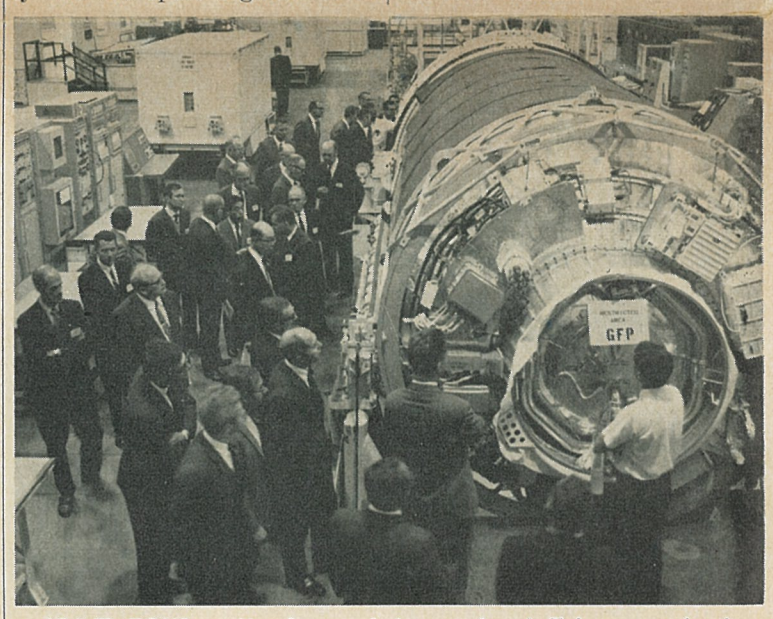
INTELSAT Representatives Inspect Atlas and Centaur Mfg. Facilities

Twenty-eight members of the International Telecommunications Satellite Consortium (INTELSAT) visited Convair division last month for briefings and a tour of the Atlas space booster and Centaur upper stage manufacturing areas. Atlas-Centaur will launch INTELSAT IV.

Visitors represented the United States, Canada, Norway, France, Germany, Italy, Japan, Netherlands and the United Kingdom. INTELSAT is a consortium of more than 60 nations which jointly own the space segment of an evolving global commercial communications satellite program.

The INTELSAT IV satellite will be designed to carry more than 5,000 two-way voice grade circuits or a combination of different kinds of communications transmissions, such as voice and television together.

Plans are for an early 1971 launch of the first INTELSAT IV into a 22,300 mile synchronous equatorial orbit. Selection of Atlas-Centaur for the launch is the first commercial assignment for the two vehicles.



JOINT TOUR — Members of International Telecommunications Satellite Consortium look over Centaur on recent visit to Convair. Consortium has selected Atlas-Centaur launch vehicle for use in forthcoming INTELSAT IV satellite program.

Questions and Answers

Mail questions or comments to "Q and A" zone 100-01. All will be answered by mail to home address. Identities will be absolutely protected.

(Continued from Page 1)

Q—At a time when cafeteria and lunch stand services are being upgraded, could consideration be given to provide hot food at the Harbor Drive facility (the ramp). There are nearly 400 of us here.

A—Harbor Drive facility is included in overall plans and permanent food services will be available starting in February, 1970. In the interim, improved service by truck is scheduled to begin this week.

★ ★ ★

Q—Food furnished by the Prophet Co. at the Plant 19 outing was wonderful. Why not a comparable meal for the same money in-plant?

A—So many praised the picnic food that cafeteria management plans to prepare a similar meal periodically as a main entree at lunch.

Speedy and Simple Measuring Device Developed From 'Pen Holder' Principle

A Magnaball measuring system developed by Convair division for fast, simple, and cost-saving measuring of machined, cast, and forged parts will be produced and sold by Collins Microflat Co. of Hawthorne, Calif., under a Convair license agreement.

Convair, Fort Worth, and Pomona divisions will be among the first industrial organizations in the nation to use the technique.

In the system, measuring accessories mounted on steel balls are set into place over concave magnets that are spaced two inches apart in a grid pattern in the surface of Microflat black granite surface plates.

Use of the Magnaball system will minimize need for special-made gages for precision checking of parts for diameter, concentricity, radii, tangent points, parallelism, squareness, taper, depth, and other measurements.

Dial indicators or set pins are attached to the accessories for precise measurements with standard "go—no go" step guages. Templates can be used with the accessories for rapid checking of curved surfaces and variable angles.

Position of each precision-inset magnet in the surface plate grid is identified by a letter and number. Accessories to check each part, with each of their four ball contacts also marked with a grid letter-number position, can be set in place in less than a minute.

Convair has applied for a patent on the Magnaball system and has licensed its production and sales to Collins Microflat Co., a division of Federal Products Corp. and one of the largest producers of precision-surfaced black granite surface plates.

Magnaball was developed by Al Blakey, a quality control engineer, Jerry Swarts, DC-10 reliability project administrator, and Jack Adams, a quality control engineer — all from Convair's reliability control Dept. 149-7 at Lindbergh Field (LF) plant.

The concept evolved months after Swarts gave Blakey an old pen set with a ball-mounted pen holder that swiveled because the ball was held by a magnet. Blakey conceived the idea of adapting the concept to precision measurements and interested Swarts and Adams in helping.

R. H. Gilliland, LF manager of reliability control, authorized manufacture of initial hardware to "prove out" the concepts. Original aluminum surface plates were prepared with assistance of E. H. Damarus of Dept. 400-0. P. S. Rader of Dept. 572-3 and C. W. Owens of Dept. 144-4 assisted in accessory fabrication.

The first granite surface plate produced especially for the Magnaball system, now in use at LF, has a 2 x 3-foot surface and weighs about 1,000 pounds. A 5 x 18-foot Magnaball plate has been ordered for use at LF and a 4 x 8-foot one is scheduled for installation at Air Force Plant 19 late next year.

Blakey said use of the Magnaball system by different General Dynamics divisions will eliminate need for transfer of inspection tooling with parts when inspection at more than one location is necessary.



INSPECTION INGENUITY—Using Magnaball measuring system they created in precision checking F-111 external fuel tank bulkhead part measurements are, from left, Al Blakey, Jack Adams, and Jerry Swarts of Convair division. System, providing precision measuring without expensive machining, will be produced and sold under Convair license agreement.

Contracts/Pricing Program Grads Assume New Duty Assignments

New assignments have been announced for the first four men to complete a one-year program as General Dynamics' contracts/pricing management associates under auspices of Corporate Headquarters.

G. V. M. Minton and R. A. Hodshire have returned to Fort Worth division with promotions to key negotiating roles on the F-111 program; R. A. Waller, formerly with Quincy, received a promotional transfer to Electronics-Rochester; and T. S. Wied, formerly with Convair, has joined the staff of Max Golden, Corporate vice president, in New York.

During the year, each of the four spent several months at two or three different divisions as well as at Corporate Headquarters. The program is guided by G. W. Keach, director of pricing, and R. A. Wohl, director of contracts, at Corporate Headquarters.

"Aim of this program is to provide high-potential young contract and pricing administrators with a broad base of knowledge and experience on major contractual issues throughout the Corporation, while concurrently strengthening key division operations," Wohl said.

"Significant contributions to major programs at Electronics, Convair, Quincy, Canadair, and Pomona have been made by the four men in the program during the past year."

Minton, 36, earned his undergraduate and law degrees at the University of Texas, formerly served as an Air Force officer, and has been with General Dynamics more than three years.

Hodshire, 34, is a graduate of Texas Christian University, formerly served four years in the Navy, and has been with the company more than eight years.

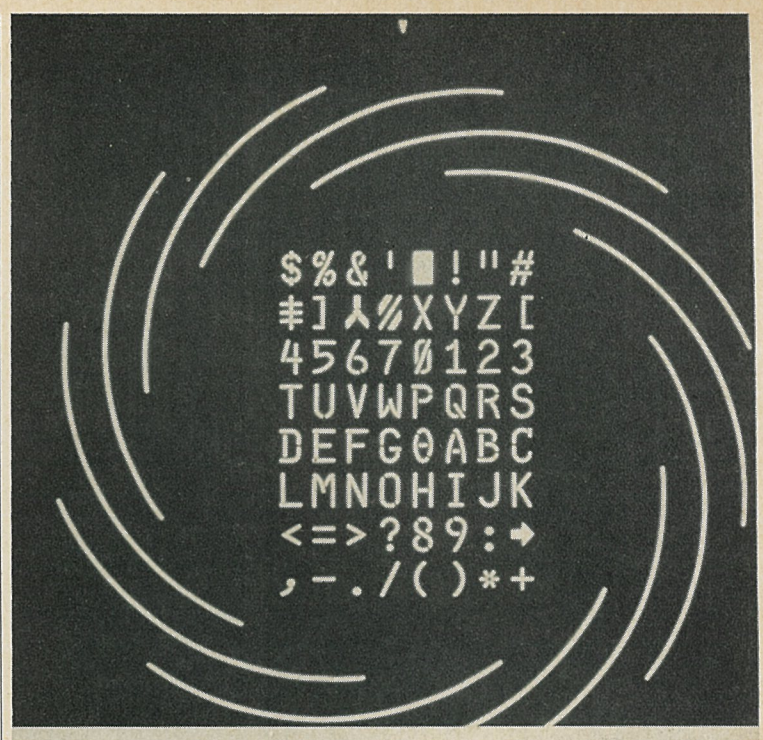
Waller, 29, was graduated from Babson Institute, is an ensign in the Naval Reserve, and has been with General Dynamics more than three years.

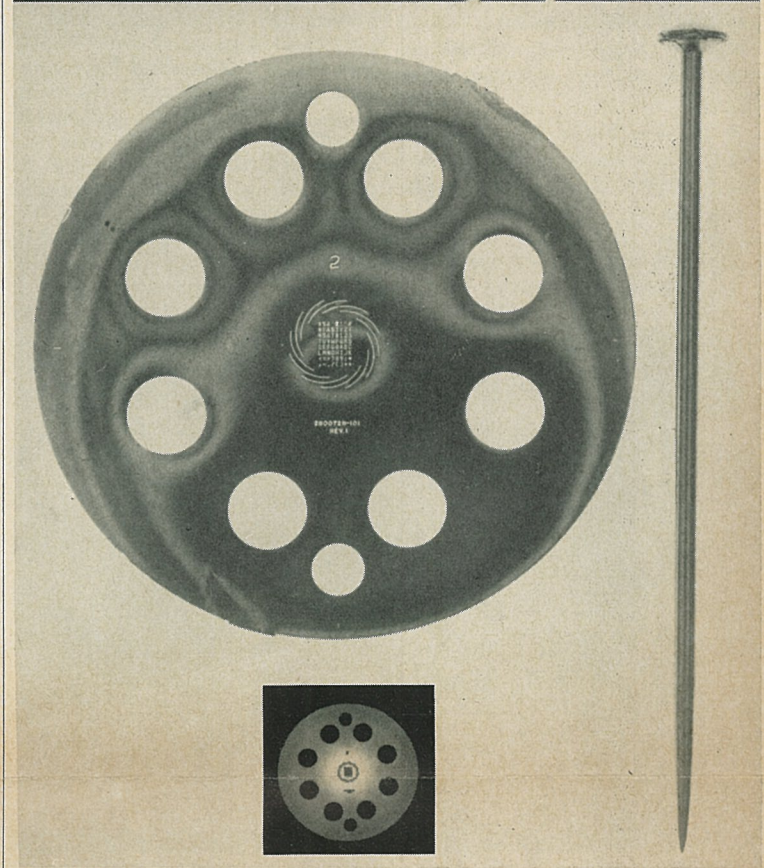
Wied, 29, is a San Diego State College graduate with graduate studies leading toward an MS degree and has been with the company more than eight years.

Now assigned to the program for the 1969-70 year is Kenneth A. Pels, who recently joined the Corporation after serving as a captain in the Air Force. His initial assignment is with Electronics division in Rochester.



MGT. ASSOCIATES—Recently completing year in General Dynamics' contracts/pricing management associate program, from left, were G. V. M. Minton, R. A. Hodshire, T. S. Wied, and R. A. Waller. Training was part of Corporate-wide "Management Upgrade" program.





THREE DIMENSIONS—Size comparison of matrix used in some DatagraphiX custom and Micromation systems is shown in three different views. In top photo, matrix is magnified many times, illustrating clear character definition of tiny disc. Photo below shows same matrix compared in size to common straight pin while inset depicts matrix in actual dimension.

Matrix Called Vital Key In Micromation System

The CHARACTRON® Shaped Beam Tube and its tiny matrix are synonymous with the Stromberg DatagraphiX Micromation and custom systems that utilize direct outputting of computer processed data onto microfilm.

Just as the shaped beam tube is the heart of Micromation, it should be noted that the matrix probably is the most important element of the tube itself.

Bob Peters, general foreman of tube manufacturing, said matrices undergo a variety of processes that start with a piece of copper foil less than .001 of an inch in thickness.

"The birth of the matrix," Peters said, "is when the foil is subjected to a variety of cleaning cycles, then sensitized with a plastic film."

The film, or resist, is placed on the matrix which itself is placed onto a centrifugal force spinner-type unit that evenly coats the foil with the proper resist thickness.

Once oven dried, the matrix, although yet in foil form, is exposed to a master matrix character plate and developed somewhat in the same manner as an ordinary camera negative.

The etched character heights of the matrix range from .004 to .020 of an inch depending on customer or user requirements.

The matrix, inspected at various steps in the manufacturing cycle with microscopic as well as optical comparator processes, receives a rhodium or nickel plate.

After being etched into final form, the matrix goes into a matrix cup that fits into a cylinder within the gun. Alignment of the tiny disc must be perfectly concentric within the center of the gun.

Peters said the various matrices differ with a different matrix specified for practically each tube type. "For instance," he said, "we make a matrix that displays Japanese characters."

Most matrices consist of symbols, numerals, capital and lower case letters. To sum up and generalize the matrix characters, Peters said DatagraphiX utilizes every conceivable symbol used in the printing industry.

Displayed characters, Peters continued, in all CHARACTRON® tubes are formed much as letters are shaped by a stencil. The tiny matrix inside the tube is, in effect, a stencil through which the symbols have been etched. The tiny disc extrudes the shaped beam into the character being printed and produces constant character uniformity.

According to Peters, filtered water and necessary chemicals are provided in a clean room at Plant 1 where the matrices are fabricated. All work, he said, is done in-house to conform to the rigid quality demanded for Micromation and custom products.



SECURITY SESSION—Attending General Dynamics' Manager of Industrial Security Conference in Washington recently were from left, Dick Jaeger, Quincy; Charles Scott, Stromberg-Carlson; Victor Lebfevre, Canadair; Pete Read, Electronics; Bill Donegan, Electric Boat; Bob Benton, Pomona; Algie Hendrix, Dr. John McCann, and Cliff Puckett, all from Corporate Headquarters; Jay Colvin, Stromberg DatagraphiX; Stan Sharp, Convair; Bowling Hitt and Dennis Chesshir, both from Fort Worth; and Steve Peters, Corporate Headquarters. Not present for photo were I. B. Hale, Fort Worth, and John Easton, Washington Office.



JOINT AWARD—Myke Dickey, second left, and Hank Fuller, second right, receive Employe Suggestion Awards and checks for $1,035.65 from W. W. Fox, left, acting for E. R. Peterson, vice president-research and engineering, and H. E. Moose, director of material. They collaborated on project saving more than $20,000.

Two Collect $1,035 Each for Idea That Will Save on F-111 Cabinets

Two Convair division men have received $1,035.65 each for a joint Employe Suggestion which resulted in savings of more than $20,000.

The men, Myke Dickey, Dept. 561-0 senior design engineer, and Hank Fuller, Dept. 842-0 material liaison, submitted a joint suggestion concerning electrical equipment cabinets for use in the F-111 support program.

Several new cabinets were needed in the program with a particular type of drawer. Dickey and Fuller determined that cabinets already existed in-house which met all the requirements except for the drawers, and recommended that the drawers be reworked in lieu of purchasing new cabinets.

Their awards were presented in a joint engineering and material departments ceremony.



DOLLAR PAYOFF—June Campbell, material release analyst in Convair's Dept. 840-0, receives $1,412 Employe Suggestion award check and commendation certificate from Lyle Wood, left, Convair manager of material operations. At right is Don Berhow, material control group supervisor.

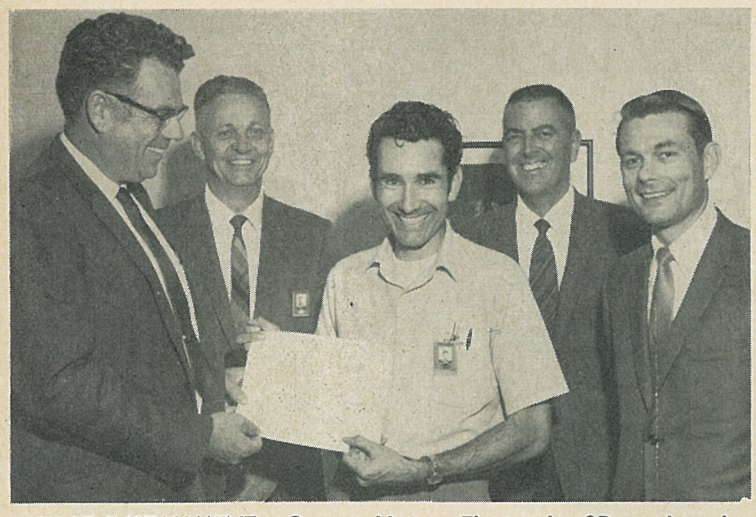
Rework of Surplus Connectors Earns Suggestion Award $$$$

A suggestion that will save more than $14,000 for purchase of F-111 electrical connectors has resulted in June Campbell, a Convair division material release analyst in material control Dept. 840-0 at Lindbergh Field, receiving a $1,412.30 Employe Suggestion award.

As a result of her persistent effort in securing implementation of the suggestion, surplus electrical connectors previously purchased by Convair are being reworked by the vendor firm to meet requirements for a new part number at minimum cost.

Don Berhow, Dept. 840 group supervisor, said use of the reworked connectors in F-111 electrical harnesses will save an estimated $14,123 during a one-year period.

The ES award check and an accompanying certificate of commendation were presented by Lyle Wood, manager of material operations.



FIRST INSTALLMENT—Gregor Vetter, Electronics-SD engineering lab electronic technician, receives $901 Employe Suggestion award check and commendation certificate from D. C. Prim, left, Electronics-SD manager. Award, largest of year for Electronics-SD, was initial payment for suggestion expected to save thousands through reuse of resistors and capacitors in setting correct "values" for new components in Space-Ground Link System (SGLS) units. Others, from left: Gordon Prentice, manager of operations; R. H. Nicholson, manager of quality control; and Gary Yates, product test section head.

$125,000 Payoff

Experts Judge Employe Suggestions After Analysts Process Proposals

Behind every Employe Suggestion there is an analyst and behind every analyst there is an expert. The analyst does the preliminary work and the expert makes the decision.

This year approximately 6,000 suggestions, representing 50 per cent employe participation in the Convair division program, have been sent to the suggestion office, according to E. D. Heller, manager of cost reduction and value control.

Here they were assigned to analysts who checked them against company criteria to verify eligibility. To be eligible for cash awards, the suggestion cannot represent a normal part of the submitter's responsibilities or assigned task. In addition, in case ideas have been passed to supervision verbally and accepted, a formal Employe Suggestion must be submitted within 15 working days after action was initiated.

Each analyst in the office is assigned suggestions from certain departments, to provide continuity in handling.

After initial screening of a suggestion, an acknowledgement is sent to the employe, telling him who the analyst is and advising him that he will be notified when the analysis has been completed.

The suggestion then is sent to departments concerned where it is checked to see if it is a good idea and, if so, how much implementation cost will be and how much will be saved.

If the idea is not accepted, the "experts" state their reasons for rejection. If more than one department is involved, the suggestion makes the rounds.

The program does not superimpose a new level of management and all suggestions go through normal management channels. It provides supervision an opportunity to be involved with employes in cost reduction and safety improvement activities.

Average time for complete analysis, from the time the suggestion arrives in the suggestion office until the employe receives an answer, is 43 working days. This compares with an industry average of 63 working days.

If the suggestion is considered a good one, the suggestion office makes necessary calculations to determine the amount of money the employe receives. If it is turned down, the office prepares an "idea disposition report" to explain the reasons.

This year more than 1,500 Employe Suggestions have been adopted at Convair with the average award $68. The total amount awarded was more than $125,000, representing savings of $1,200,000.

Not all ideas are tangible money savers. Some are safety suggestions which, nevertheless, earn the employe $15, if adopted. Some suggestions are sent by employes who just feel that something should be done which will benefit the company. In any case, all receive the attention of analyst and expert alike.



HOT SPOT—Here's where action is in Employe Suggestion group as staff handles incoming suggestions. From left, Pat McPheeters, analyst, Chuck Baker, cost reduction/value control administrator, Andy Manzi, analyst, Evelyn Smithson, secretary, Orville Neal, Bob Brown, analysts.

Tickets Available For 'Disney' Night

A family night at Disneyland is being sponsored by Convair Management Club from 8 p.m. to 1 a.m. Saturday, Dec. 13.

Don Evanson, chairman, urged anyone wishing to attend to obtain tickets at the earliest possible time. Ticket sales close Dec. 11.

Tickets are $3.95 and include free parking and admission to all attractions.

Buses for Disneyland will leave from the Kearny Mesa Parking lot at 5 p.m. Round trip fare will be $3.95.

The Disneyland Hotel is offering a special discount for those attending the San Diego night. In addition, Disneyland restaurants will offer special menus.

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Tickets on Sale For San Diego Open

Tickets for the Andy Williams' San Diego Open golf tournament, Jan. 19-24, are on sale at employe benefits and CRA outlets.

Prices are $2.75 for one $3.50 weekday admission, $4 for one $5 weekend admission, and $15 for one $24 season ticket.

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Basketball, Softball Tickets at Outlets

The following tickets are available at all employe benefits and CRA outlets:

San Diego Rockets vs. the Los Angeles Lakers basketball, Dec. 6, $4 tickets for $3.

San Diego Chargers vs. Boston Patriots football, Dec. 7, $6.

Demand Brisk For Copies of Free Diet

More than 2,000 copies of a reducing diet, mentioned in **GD/NEWS Oct. 29**, by Dr. G. M. Clarke, Convair division medical director, have been sent to General Dynamics personnel.

There are still copies of the diet available. Those interested may send a stamped, self-addressed envelope to G. M. Clarke, MD, medical director, Convair division of General Dynamics, Mail Zone 130-20, P.O. Box 1128, San Diego, Calif. 92112. (Those at Convair may obtain copies of the diet at Bldg. 1, Kearny Mesa plant, Bldg. 15 at LF plant or first aid station, Bldg. 4, Plant 19).

Veteran Data Chief, A. E. Andress, Dies

Arthur E. Andress, chief of data processing operations for Convair since 1963, died Oct. 24. He had been on medical leave for several months.

Andress had been with Convair and the former Astronautics division since 1936 and had served as a tabulator operator, tabulating supervisor, chief of tabulating, manager of systems and procedures and data processing, manager of data systems, and manager of data processing.

Retired Convair Man Returns To Receive Suggestion 'Bonus'

John A. Riehl retired from Convair division Aug. 30—but was called back Nov. 21 to receive a $1,481.40 Employe Suggestion check.

Riehl, formerly a construction mechanic in Convair's Dept. 250-2, had suggested using a table saw with two heads instead of a concrete saw for fast precision cutting of metal decking for DC-10 work platforms.

W. J. Stanley, manager of plant engineering, said the suggestion will save an estimated $14,814 during the next year by reducing time and material.

After his "homecoming" to receive the award check and a related commendation certificate, Riehl was Stanley's guest for lunch at Lindberg Field plant.

Riehl's son, John Jr., who now has his father's job **(GD/NEWS, Aug. 20)**, was present for the award ceremony.

"In a way, I feel like I'm still working for Convair," the senior Riehl commented. "When John Jr. has a problem on the job, we thrash it out at home and I provide whatever advice I can."



"POST PAID"—John Riehl, retired Convair construction mechanic, second from right, receives $1,481.40 Employe Suggestion award check from W. J. Stanley, manager of plant engineering. Looking on is Joe Childress, left, Dept. 250-2 foreman, and John Riehl Jr.



COIN FLIPPING — Reflection pool at Kearny Mesa plant again will be receptacle for Christmas coin donations. Connie Bates, Dept. 590-0 secretary, demonstrates technique. Last year more than $30 was recovered for benefit of needy.

Correct Address Vital in Assuring Delivery of Forms

Delay in receiving W-2 forms and Savings and Stock Plan statements can be avoided if employes insure that the correct Social Security number and home address appear on their pay check.

J. L. Terrien of Convair payroll suggests that employes verify their SS number and addresses on their checks, as W-2 forms and SSP statements are mailed to this address.

Employes having an incorrect SS number and/or home address should report to the employment office for correction on company records. They should fill out pink card form 3743 "Change of Address" and forward it to payroll.

Plant Fire Rules Prohibit Tree Lights

Convair division employe groups planning in-plant Christmas displays have been reminded that only non-combustible decorating materials may be used and that electric tree lighting is prohibited.

D. D. Dimmitt, division fire chief, said plastic and metalized-plastic trees should be clearly marked as made of slow-burning materials.

Natural trees, with trunks cut at an angle above the original cut, must be kept standing in water and must be kept away from fire-ignition sources. They must be removed to trash barrels outside buildings the last day before Christmas.

"Christmas is a time for happiness — not a time to be heedless of fire dangers," Dimmit said. "Let's have a merry Christmas season by keeping it fire-safe."

Air Force Honors Convair Field Rep.

F. H. Weaver, a Convair division F-106 field service representative assigned to the 95th Fighter Interceptor Sq. at Dover AFB, Del., recently was awarded a "certificate of recognition" from the USAF Aerospace Defense Command for two years "meritorious service" to the squadron.

The framed certificate was signed by Col. Thomas E. Telzrow of 33rd Air Division Headquarters.

Two days earlier, Weaver had presented 2,000-hour credentials to Maj. Frank P. Walters of the 95th after he became first Air Force pilot to complete 2,000 hours in F-106s. Pilots of the 95th FIS fly both F-106As and F-106Bs.

Convair Assists Urban League School for Keypunch Operators

The first class of the San Diego Urban League's keypunch operator school graduates today, Dec. 3.

The school opened in October with the help of Convair division and other area industrial firms and businesses which supplied equipment and instructors.

Marion Fouquette, Dept. 101-6 keypunch operator, spent two weeks training the first class and assisting the permanent school staff. Later she returned to evaluate the students.

"They have really done well," she said. "The class not only learned basic keypunch operations but also procedures that will make them valuable to local firms and the aerospace industry.

"I learned a lot myself," Mrs. Fouquette added.

According to Don Pardee, Convair manager of management systems, there is a definite and continuous need for trained keypunch operators.

There were two classes trained, one day and one night. Follow-on classes already are in progress.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Dec. 9. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS — Meeting Dec. 17, 7:30 p.m.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—University of San Diego 7-mile ride, Dec. 7, 2 p.m., KM parking lot. Mission Valley 25-mile ride, Dec. 12, 9 a.m., meet at Hilton Inn.

BONAIR FLYERS — Meeting Dec. 4, 7:20 p.m.

BRIDGE — Duplicate bridge sessions each Friday, 7:30 p.m.

CAMERA CLUB — Meeting Dec. 21, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 9 a.m.-noon and 7-10 p.m.

CHORUS — Rehearsals Mondays, 7:30 p.m.

COINEERS—Christmas party and business meeting, Dec. 8, 7:30 p.m.

COUNTRY AND WESTERN MUSIC—Meet Thursdays, 7:30 p.m., CRA Missile Park picnic shelter.

DELTA DIVERS — Meeting Dec. 10, 7:30 p.m.

FENCING—San Diego Invitational Fencing Tournament, Dec. 14, 11 a.m.; S.D. State College Women's Gym. Workouts and instructions Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Potluck, 6:30 p.m. meeting 7:30, Dec. 16, Gillespie Field Clubhouse.

GARDEN CLUB—Meeting tonight (Dec. 3) 7:30 p.m., Floral Association Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m. Monday through Thursday; 9:30 a.m. to 9 p.m. Fridays; 10 a.m. to 5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m. to 11 a.m.

HI-FI MUSIC—Meeting Dec. 9, 7:30 p.m.

ICE SKATING—GD family skate night each Thursday, 6:15-7:45 p.m., House of Ice, Interstate 8 and Lake Murray Blvd. Flat rate fee $1.00 (includes skates).

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday, 7 p.m., CRA Missile Park.

PISTOL CLUB—Club shoot, Dec. 14, 9:15 a.m. San Diego Police Pistol Range, Federal Blvd. & Home Ave.

RADIO CLUB—Meeting Dec. 4, 7:30 p.m.

RIFLE CLUB—Senior shoot, Dec. 10, 7 p.m. Junior shoot, Dec. 6, 9 a.m. Gillespie Field Range.

ROCKHOUNDS—Meeting Dec. 10, 7:30 p.m.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m.

SPORTS CAR CLUB — Meeting Dec. 10, 7:30 p.m., Kearny Mesa executive dining room.

SQUARE DANCE — Dance Thursday, 8-10 p.m.

STAMP CLUB—Election of officers at Dec. 11 meeting, 7 p.m.

TABLE TENNIS—Friday night league, 7:30 p.m. Play Saturdays, 10 a.m.-4 p.m.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m. Dynamic Toastmasters No. 457, Thursdays, 5:30 p.m.

TROPICAL FISH—Meeting and workshop, Dec. 15, 7:30 p.m.

Paint Program At LF Continues

Convair division's Lindbergh Field plant is getting a bright "new look" as part of a continuing renovation program. All buildings will be white with black trim by the end of January.

W. J. Stanley, manager of plant engineering, said almost a million square feet of exterior building and appurtenance surfaces are being refurbished. Bldgs. 4, 33, 3, and 2 were among the first painted last month as part of current work in a division-wide rehabilitation program that has been under way four years.

In conjunction with the rehabilitation program, a plant clean-up under way has resulted in several hundred tons of surplus metal and wood from past programs being sold as scrap or moved to the salvage yard for disposal.

Al Adkinson, Dept. 250-0 industrial engineer and coordinator of the clean-up effort, said most of the obsolete material was "written off" years ago but has been occupying valuable space.

Some usable stands and fixtures have been set aside for rehabilitation and return to inventory.

Building interiors at the LF plant also have been undergoing rehabilitation, including repainting, rewiring, and relighting, on a regular schedule since 1965.

Chargers-Bills Game Tickets Offer Savings

All General Dynamics employes are being offered reduced-rate tickets for the Dec. 14 San Diego Chargers—Buffalo Bills football game through Convair Management Club. Cost is $5.50 for $6 seats and $4.10 for $4.50 seats.

Tickets can be obtained from club boosters, CRA, or Convair and Electronics-SD employe benefits outlets. Proceeds will go to the Management Club scholarship fund.

Coin Club Plans Christmas Party

CRA Coineers will hold a Christmas party and short business meeting at 7:30 p.m. Monday (Dec. 8) in CRA Clubhouse. Visitors are welcome. There will be door prizes, a drawing, and a gift exchange.

Boy and Girl Scouts will be honored at the Coineers' Jan. 12 meeting. Coin collecting to meet merit badge requirements will be discussed and donated coins will be given to scouts attending.

Reservations for attendance of scouts, individuals or groups, can be made until limit is reached by phoning Steve Ames, ext. 659 LF; Harry Jennings, ext. 1176 KM; or Chuck Willey, ext. 2729 KM.

May Dean's Golfing Wins Turkey, Trophy

May Dean Schell won a Thanksgiving turkey and a trophy Nov. 8 at the General Dynamics Women's Golf Club's "best ball of partners" and "turkey shoot" at River Valley.

She took the turkey award with a low net 31 on the nine-hole course and she and Ilene Wilson won Flight A trophies. Flight B trophy winners were Ora Carpenter and Rose Hubler.

Next tournament will be Jan. 10 at Los Penasquitos Golf Club, with tee-off at 8:30 a.m.

Yule Hootenanny Scheduled Dec. 12

CRA has scheduled a "Christmas Western Hootenanny Hee-Haw" at 8 p.m. Dec. 12 in the Clubhouse auditorium. Ruby Graves will be master of ceremonies and director for the show, which will feature a variety of western music.

All General Dynamics families have been invited. There will be no admission charge and refreshments will be served.



RICE FED—It was goose, not turkey, for these hunters' Thanksgiving dinners. Shown in Texas rice fields near Eagle Lake, from left: Fred Kennie, Convair division; V. O. Weese, Convair, San Antonio; Bob Roberts, Houston and San Antonio Corporate field offices; Dr. Bud Newsom, NASA.

Fencing Tournament Scheduled Dec. 14

The San Diego Fencers Club, jointly sponsored by CRA and the YWCA, will host the 10th annual San Diego Invitational Fencing Tournament Sunday, Dec. 14, at the San Diego State College women's gym.

The club has sponsored the event each of the past ten years. Preliminaries will begin about 11 a.m. and finals about 4 p.m. A number of Southern California clubs are expected to compete.

There will be no admission charge. For information call Mike Hurley, ext. 1052 KM.

Ak Miller to Speak For Sports Car Club

Ak Miller, veteran automotive innovator and racing driver, will speak at a CRA Sports Car Club meeting at 7:30 p.m. Dec. 10 in the executive dining room at the Kearny Mesa plant.

Miller, now a consultant to Ford Motor Co., began tinkering with a Ford-powered Chevy roadster in 1934 and is perhaps best known for his conquests of Pikes Peak and Bonneville. He recently was among winners of the Mexican 1,000-mile off-road race.

Hot Rod magazine, in an article on Miller, said his "fingerprints can be found on virtually every phase of the automotive sport."

Additional information on the meeting can be obtained by calling Jim Franklin, program chairman, ext. 1315 LF.

Stamp Club Offers First-Day Covers

CRA Stamp Club is helping support the national Easter Seal Society by selling first-day cover envelopes with U. S. postage stamps issued in honor of the society's 50th anniversary.

Cost for the first-day-cancellation stamped envelopes is 30 cents each. For information, call Haydon LaNois, ext. 1139 LF; Fred Bloschies, ext. 2092 KM; or Art King, ext. 1981 LF.

Stamp Club officers for next year will be elected at the 7 p.m. Dec. 11 meeting in CRA Clubhouse. Meetings are open to adults and children.

Twi-Lite Golf Winners Listed

Jim Lothringer and Dick Bender took first-place-team trophies in Convair Management Club's Twi-Lite Golf League play on the Mission Bay course. Twenty teams competed in the evening league, with other winners receiving gift certificates.

Marion and Ben Hill were second place winners, Bud Cavin and Bud Swindall were third, and Doc Watson and Manny Gonzales were fourth.

The "ringer tournament" was won by Marty Formanek with Chuck May second, Terry Kell third, and Ken Fountain fourth.

Ladies' division awards went to Freda Margargal, Madelyn MacDonald, and Flo Kell.

League winners were not determined until the final night of action and only 20 points separated the first and eighth place teams.

Toastmasters Club Elects New Officers

Dynamic Toastmasters Club No. 457 elected new officers at its November meeting. They are:

Ed Collins, president, Stromberg DatagraphiX; Ray Eichmann, educational vice-president, Convair; Jim Hamill, administrative vice-president, Electronics-SD; Art Davis, secretary, Stromberg DatagraphiX; Dave Lukens, treasurer, Convair; and Bill Gordon, sergeant-at-arms, Convair.

The Dynamic Toastmasters meet at 5:30 p.m. every Tuesday in the CRA Clubhouse. For information call Ezra Johnson, ext. 3388 KM, or any officer.

Bike Club Plans Weekend Rides

CRA Bicycle Club will go on a 12½-mile ride Dec. 7 and a 25-mile ride Dec. 13.

The Dec. 7 ride will begin at 2 p.m. from the Kearny Mesa parking lot and go to the University of San Diego. Carol Lukens will be ride leader.

The Dec. 13 ride will begin at 9 a.m. at the Hilton Inn and go to Mission Valley under the leadership of Bill Kennedy. For information, call Dave Lukens, ext. 2881 KM.

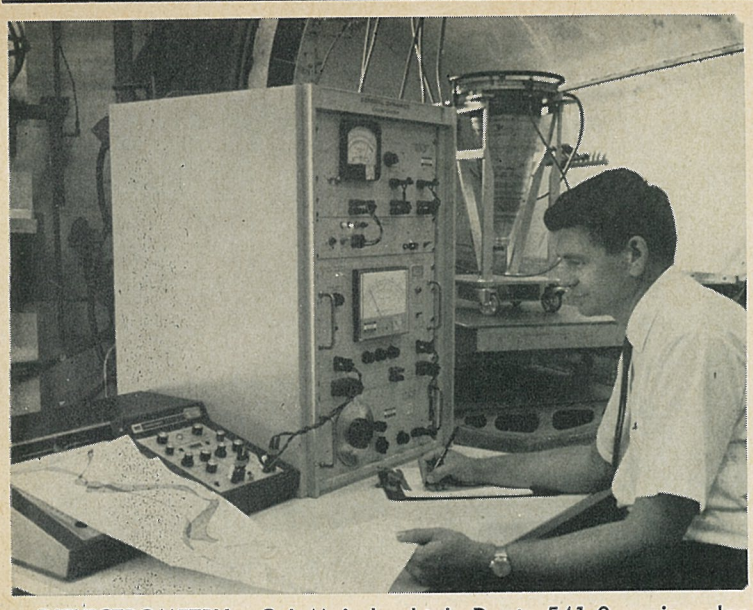
After 15 Years, Dedicated Bowler Rolls Dozen Strikes in a Row

Nov. 10 was a day Joe Arnold, cataloging analyst in Convair's material control Dept. 842-0, will never forget. After 15 years of trying, he bowled a perfect 300 game at La Mesa Bowl!

Arnold was the second General Dynamics employe to roll a perfect game at a San Diego bowling alley in six months. Ken Beckner of Electronics-SD rolled the other 12 straight strikes June 4 at Aztec Bowl, **(GD/NEWS, June 25).**

Arnold bowls each Thursday night with the Hilltoppers, a team captained by Convair's John Overdeer, at Clairemont Bowl—and other times during the week when the opportunity presents itself. "My wife says I'd rather bowl than eat," he commented.

The perfect game Nov. 10 was the fourth game of the evening for Arnold. He rolled 179, 172, and 189 before the "magic 300." Scores for his final two games the same evening were 221 and 225.



DIELECTROMETRY—Cal Meierbachtol, Dept. 541-0 senior electrical engineer, monitors Convair developed Dynamic Dielectrometry system which "sees" invisible changes which plastic laminate missile and space vehicle components undergo during high temperature curing process.

Dielectrometer Developed To Monitor Plastic Changes

Convair has developed a measurement system that provides a continuous graphic record of changes within a plastic laminate as it is cured.

The system, called dynamic dielectrometry and utilizing a Convair-developed dielectrometer, assures a higher degree of material structural reliability than heretofore possible.

Experts in the field say there long has been a need for greater consistency and higher reliability in mechanical properties of reinforced plastics.

Plastics manufactured and cured under identical conditions have had widespread variations in physical properties. Under-rating by 50 per cent to compensate for the variations is not uncommon.

Problems were compounded with the introduction of polyimides, a special reinforcing material that provided high strength retention at elevated temperatures for long periods.

The polyimides increased variations in the plastics due to their peculiar characteristic of producing large amounts of gas during the curing process.

To produce a consistent product, monitoring of electrical quantities relating to structure of matter and electrical charge was found necessary, in addition to monitoring temperature, pressure, and other observable factors.

The Convair dielectrometer, developed to accomplish the monitoring, checks up to four samples through the curing process and also can check new lots of raw material to help insure quality.

It was suggested by Henry Laue of Dept. 541-0 and was developed by M. D. Bear of Dept. 541-0 with assistance from Douglas Mayberry of Dept. 491-0.

When dielectrometer data is correlated with other cure-cycle and material information, an optimum cure-cycle can be developed to produce a high degree of material reliability in the finished product.

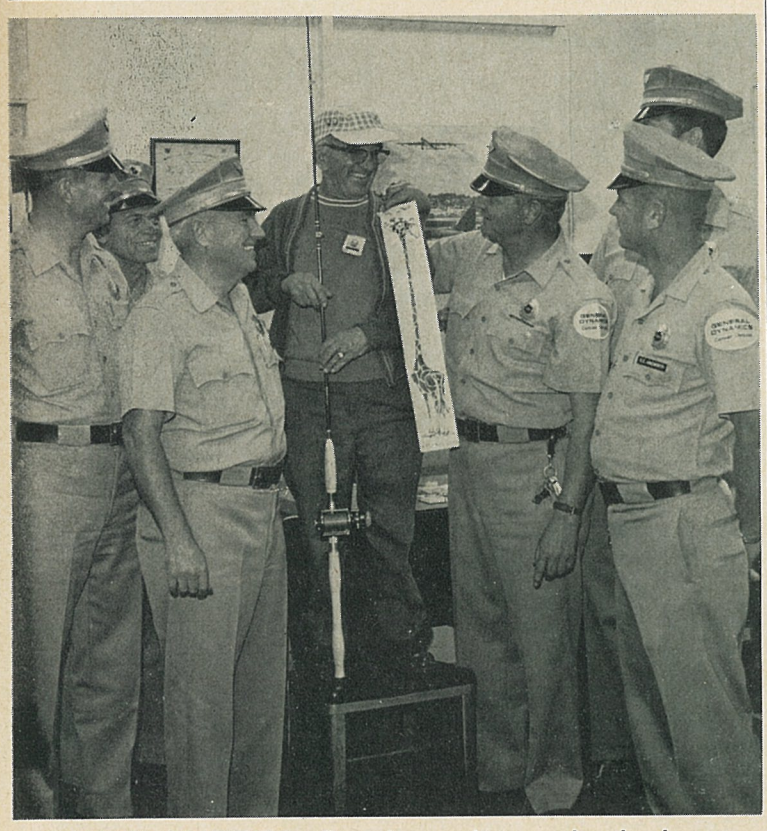
Dynamic dielectrometry is presently being used on a supersonic missile program where the end product is a nose cone that receives high aerodynamic loads while protecting a complex electronic system.

The Convair dielectrometer also has wide application potential in other areas of the plastics industry.

Apprentices Tour General Motors

Forty six Convair division apprentices, apprenticeship program graduates, and guests made a bus trip to South Gate, Calif., Nov. 7 for dinner and a tour of the General Motors assembly plant. The tour was arranged by Wayne Turner, apprenticeship program coordinator.

The division has 35 enrolled in four-year tool and die, jig and fixture, electronic, inspection, plaster pattern, calibration, and machinist apprenticeships. More than 250 employes have completed apprenticeships since the program began in 1942.



GUARDS' GRATITUDE—Convair security guards who have exchanged friendly banter for years with Arthur L. "Shorty" Gardner, 4'11" "yard clean-up man" for maintenance Dept. 250-1, gave him fishing gear and other gifts when he retired after 25 years service. Making presentation as "Shorty" stands tall in chair, from left, are guards M. R. Hawkins, K. R. Van Gorder, Joe Card, N. E. Wallace, D. E. Ainsworth, and Pete Trevino.

Coast Guard Research Chief Inspects Bravo

RAdm. Chester A. Richmond Jr., chief of the office of research and development for the U.S. Coast Guard, visited Convair division's Lindbergh Field plant Nov. 5 in conjunction with his responsibility for the National Data Buoy Development Project.

His visit followed a more comprehensive briefing Oct. 20-21 for Capt. Virgil Rinehart, program manager for the Project, and Cdr. Robert Witter, technical director.

The National Data Buoy Development Project office is charged with responsibility to develop a national capability for deploying and maintaining networks of unmanned automated meteorological and oceanographic data buoys in deep-ocean areas of the world and in the continental shelf and Great Lakes regions of the United States.

The Coast Guard directs the project for the federal government and Convair is providing support through its ocean data systems department.

Roy Woodle, Convair project manager for national data buoy systems, said the visiting Coast Guard officials reviewed Convair contractual and proposed contractual activities in support of the program, related independent research and development work, and internal system planning studies.



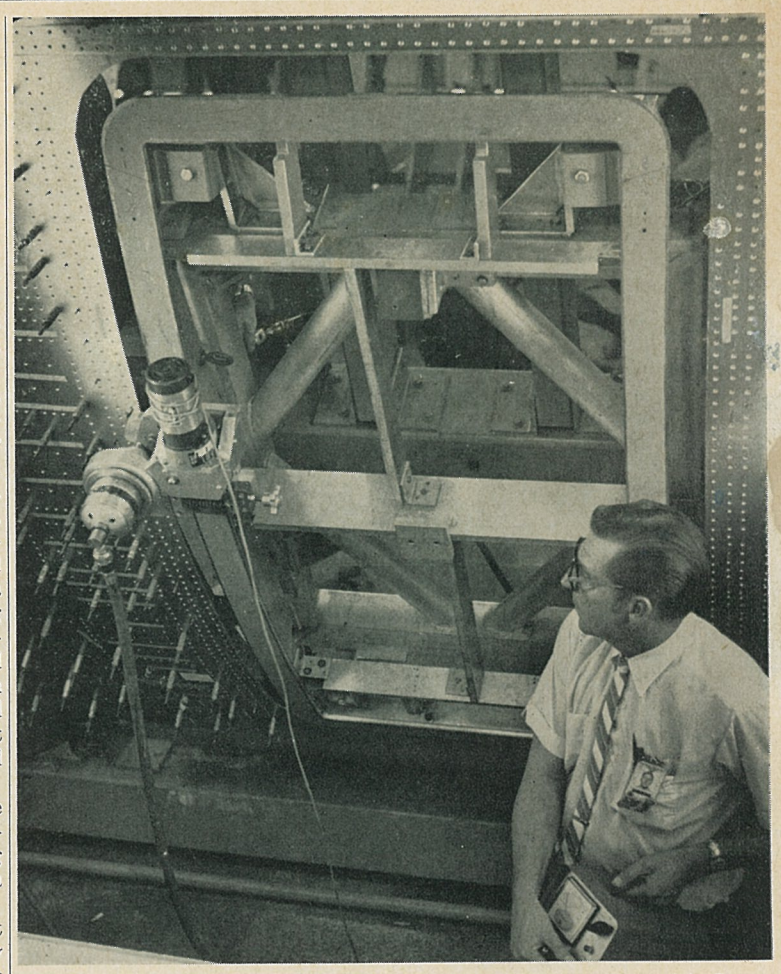
ADMIRAL VISITS — RAdm. Chester A. Richmond Jr., second from right, looks over Convair-built ocean data station Bravo during recent visit to San Diego. Others, from left, are R. V. Woodle, J. W. Petre, P. S. Branson, and D. B. Dewey Jr., all Convair.

Admiral Richmond saw a film on Convair ocean data and navigation stations, inspected ocean data station Bravo at Lindbergh Field, and visited the Marine Technology Center at General Dynamics' Harbor Drive facility.

He also visited Scripps Institution of Oceanography, where he was briefed on the North Pacific Study of the Office of Naval Research and—at Convair's mobile data center—observed interrogation of ocean data station Alpha via high-frequency ionospheric telemetry and via Applications Technology Satellite-1. Alpha is moored in the North Pacific about 2,200 miles from San Diego.

Convair personnel participating in the briefings included W. T. Dorrance, Robert Devereux, Peter S. Branson, J. W. Petre, Woodle, Kenneth Samples, David Dewey, K. N. Jones, Alan Phillips, Carl Nelson, Jack Foster, L. A. Scott, and John Thayer.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



DOOR CUTTER—R. D. Nowka, a tool engineer in Convair's Dept. 400-0, operates router control unit in demonstrating use of routing fixture developed by Convair for cutting of DC-10 passenger and cargo door openings.

Convair-Developed Fixtures Used In Cutting of DC-10 Door Openings

Convair has developed special routing fixtures for automated precision cutting of openings for passenger and cargo doors in fuselage panels for the DC-10 trijetliner.

A routing fixture is set over the fuselage panel area to be removed and is bolted in four places to a locating fixture on the inside of the panel. The router cutting head moves around a gear-rack at up to 20 inches per minute to cut the desired opening.

The fixtures will be used for cutting passenger, forward cargo, aft cargo, and bulk cargo door openings in each fuselage while panels are attached to large assembly fixtures in Bldg. 3 at Convair's Lindbergh Field plant.

R. D. Nowka, a tool engineer, H. "Aki" Akiyami, a tool design analyst and Owen Pullins, a senior designer, all of tool design Dept. 400-0, designed the unique automated cutting system after being asked by DC-10 program office personnel to devise a power-feed unit for the cutting. Ed Smith of Dept. 401-5 assembled the fixtures.

In previous aircraft production programs, openings for such doors have been rough-cut by hand saws, then filed and smoothed through a variety of time-consuming hand-tool operations.

A control unit used with the router on the new fixtures controls feeds and speeds of the cutting head. Nowka said cutting normally is expected to be done at about seven inches per minute.

Four different sizes of fixtures, each of the same basic design, will be used in cutting of the DC-10 door openings. Sections of the fuselage panels to be removed vary in thickness from 2/10 to 3/8 inches. Radius of corners to be cut also varies for the different sizes of door openings.

Nowka said a rough cut with a hand saw still will be made in the fuselage panel to simplify attachment of the routing fixture to the holding fixture on the opposite side of the panel.

The motor-driven router will be run around the gear rack first with a 3/8-inch-diameter high-speed steel cutting head. A ½-inch-diameter carbide-tipped cutter then will be substituted for the fine-finish cut.

An invention disclosure has been made on the routing fixture, which is expected to have wide application in other metal-cutting operations including cutting of window openings in aircraft fuselages.

Supervisors Attend 'Minority' Seminars

Seventy Convair division supervisors from Air Force Plant 19 and Lindbergh Field departments attended recent two-hour, after-work seminars on "Management, motivation, and the new minority worker."

Seminars, arranged by Harry Rote and Paul Pearson, were conducted by David Chigos, Dept. 130-3.



RETIREMENT—Joe C. Nemec, left, supervisory quality control representative for DCASPRO quality assurance division, receives retirement certificate from Col. Charles F. Merz, DCAS San Diego district commander.

WELCOME!

1769-1969 San Diego 200th Anniversary

Convair Division
of General Dynamics Corp.

SOUVENIR EDITION

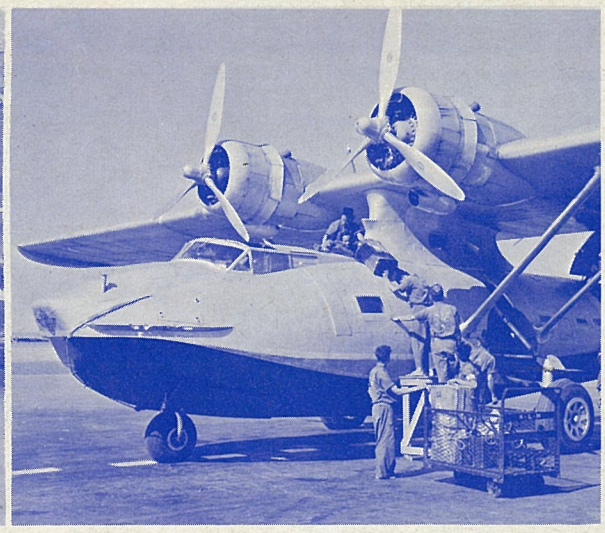
GENERAL DYNAMICS
NEWS

Vol. 22, No. 23-A PUBLISHED BY GENERAL DYNAMICS CORPORATION Saturday, December 6, 1969



NIGHT SPECTACULAR—This was B-36 modification line at San Diego in 1950s, near where today's Product Display is being held. Modification included addition of outboard jet engines to supplement B-36's four piston power plants.





WAR HORSES—At right is PBY Catalina produced in several versions for wartime patrol and rescue duties. Rugged amphibian saw duty around the world. At left is celebration when 5,000th B-24 Liberator rolled off line, covered with "autographs."





FLIGHT LINE—Darling of pilots then (1950s) as now are Convair-Liner passenger planes, safe, dependable, almost indestructible. At right, also a pilot's airplane, are F-102s on takeoff at San Diego.

You Stand Upon Historic Ground

For the men and women of Convair, conscious of a proud heritage, this is historic ground.

Battles have been won and lost here, perhaps a war decided in some part. And the lives of millions have been made safe in the air.

The ground you walk upon today has felt the soft tread of the PBY amphibian back in the 1930s, those fabulous twin-engine flying boats that patrolled the oceans of the world before and during World War II, on lonely lookout for enemy fleets. More than three decades later some still are flying, in the Amazon, off New Guinea, in Alaska, carrying mail and supplies to remote outposts. Convair airplanes have a habit of not giving up, even to the advance of age.

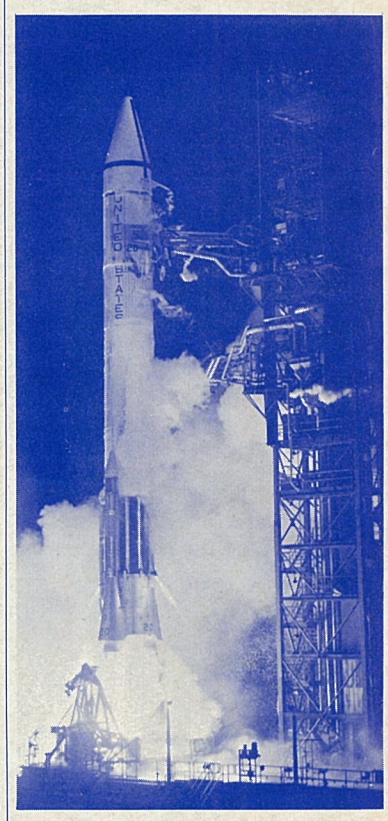
The ground you walk upon today has trembled to the countless B-24 Liberators in four-engine run-up before first flight and ferry to war zones. This was the airplane of WWII that brought pilots and crew back safe on "a wing and a prayer." She was no luxury liner inside and sometimes she was hell to hold in formation, but she was honest and indomitable and she made her attack and if the fighters and the flak left her with a minimum of tail and a piece of wing she'd come home. Returning safe is a strong family trait in Convair.

In the 1940s came peace and this ground supported the first of more than 1,000 two-engined passenger planes that became known as Convair-Liners. They were—and are—marvelous airplanes, so carefully designed and so sturdily built that they are almost indestructible. They, too, can come home on a "wing and a prayer" if need be. There was the time that a suicidal passenger smuggled a bomb aboard, blew himself to Kingdom Come and blasted a truck-size hole in the fuselage. It was a little breezy for the rest of the flight but all passengers—except the bomber—deplaned safely. It was simply a matter of family pride.

While Convair was filling the skies with Convair-Liner Models 240, 340, and 440, during the 50s, other airplanes were developed by Convair and this historic ground has shuddered to the run-ups of those sky giants, the B-36 intercontinental bombers. Thankfully, though they guarded the peace they never saw combat. Also coming along were the revolutionary F-102 and F-106 supersonic interceptors. Both continue to be an important part of the Air Force inventory and both have seen action in Southeast Asia.

While continuing to produce F-102s and F-106s, Convair in the 50s sought a continuation in commercial transport, this time with four-engine jet passenger planes. Convair engineers designed the 880 and the 990, the latter so fast that it flies within a few miles of the speed of sound. Though they were—and are—marvelously designed airplanes and built with the same painstaking craftsmanship that marks all Convair products, the venture resulted in losses. The reasons were many and complex. One remark that went around the industry, "Convair doesn't know how to build anything except Rolls Royces" contained an element of truth. Not only were Convair engi-

(Continued on Page 4)

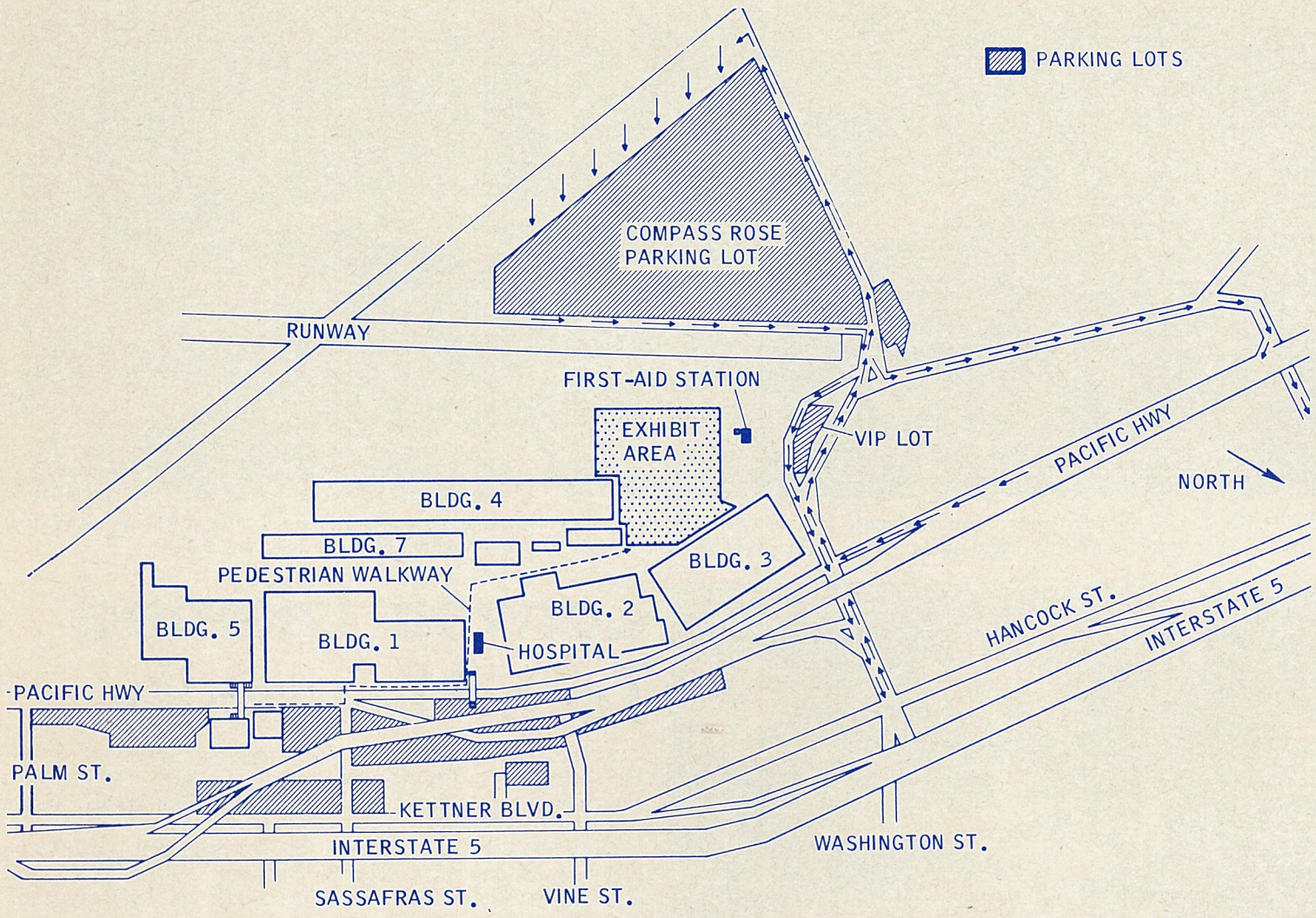


POTENT — Important product of both past and future is this mighty Convair space vehicle, Atlas-Centaur.

CONVAIR AIRCRAFT 1923 - 1966



1. TW-3
2. PT-1
3. XPY-1
4. NY-1
5. Commodore
6. Fleet
7. XP2Y-1
8. P2Y-3
9. P2Y-2
10. PT-11C
11. XB2Y-1
12. Fleetster
13. Stinson Tri-Motor
14. XP4Y-1 M-31
15. PB2Y-2 Coronado
16. YIP-25
17. XO-17
18. Fleet, M-10 (Float)
19. PB-2A
20. PBY Catalina
21. B-24
22. XBY-1
23. A-19 Reliant
24. BT-13
25. M-111
26. A-33
27. XP-54
28. Voyager
29. L-1
30. Flying Auto
31. V-12
32. T-29
33. PB4Y-2 Privateer
34. B-32
35. TBU-2 Seawolf
36. YB-60
37. XF-92
38. XB-46
39. L-13
40. XP-81
41. XA-41
42. XC-99
43. XF2Y-1 Sea Dart
44. R3Y-2
45. B-58, F-106, F-102
46. 340
47. B-36
48. 440
49. XFY-1 Pogo
50. F-106
51. 880
52. Charger



PLANT PROFILE—Major buildings at Lindbergh Field plant are shown in relation to exhibit area and parking lots. Atlas and Centaur space launch vehicles, F-102 and F-106 fighter aircraft, a giant C-5 Galaxy empennage (tail section), F-111 aircraft parts and assemblies, ocean data station Bravo, and other Convair products will be on display in exhibit area.

Convair Receives Highest Award For Craftsmanship

Convair division will receive the Air Force's highest award for sustained outstanding performance in producing quality products at 1 p.m. today in ceremonies at the display area.

The award, the Air Force Zero Defects Program Sustained Performance Craftsmanship Award, will be presented by Maj. Gen. Louis L. Wilson, vice commander of the Space and Missile Systems Organization of the Air Force Systems Command.

It will be accepted by Jack L. Bowers, Convair division president, in behalf of all division employes.

The award ceremonies will be preceded by music from the Marine Corps Recruit Depot Band, which will begin playing at 12:30 p.m.

Other participants in the program will include Mayor Frank Curran of San Diego; Charles Cordell, director of San Diego's 200th Anniversary celebration; and De Von E. Biggs, representing the Pasadena office of the National Aeronautics and Space Administration.

Winning of the Sustained Performance Craftsmanship Award has been one of the major objectives of Convair division this year.

"All of us have worked hard to win," Bowers said, "I am proud of our efforts. Only nine other firms in the United States have ever qualified for such an award."

Convair previously had received three other awards in the Air Force Zero Defects program.

They were the Air Force Zero Defects Program Participation Award in May, 1965, the Air Force Zero Defects Achievement Award in January, 1968, and the Air Force Craftsmanship Award in January, 1969.

For the Craftsmanship Award presented in January, Convair division had achieved a record by reducing number of defects or errors per 1,000 manhours worked to 14.9. An even further reduction—to 14.7 defects per 1,000 manhours—was achieved during the year for which the Sustained Craftsmanship Performance Award is being presented.

Other achievements leading to receipt of the highest Air Force Craftsmanship award included 46 consecutive successful launches of Atlas space launch vehicles and 10 successful operational launches of high-energy, liquid-hydrogen-fueled Centaur second-stage space launch vehicles.

Refreshments, Special Services Provided for Convair Guests

Several special services are being provided for the convenience, comfort, and information of visitors to today's Convair division Products Display and Air Force Sustained Craftsmanship Performance Award presentation ceremony.

Refreshment booths are set up around the area. There is no charge for the refreshments.

A first-aid and lost-and-found station is located north of the exhibit area and east of the bandstand.

Rest room facilities are along the north and south borders of the exhibit area, near the first aid station on the north and the F-111 display on the south.

Information on each of the products exhibited will be available at the display.

Souvenir coins for visitors, commemorating the display, are available at tables on the airport side of the display area. The coins are free but are limited to one per person.

Convair hosts, wearing red badges, will be glad to answer questions and provide assistance.

Times Given For Events

Following is the agenda for the Products Display show today (Dec. 6) at Convair division's Lindbergh Field plant:

9 a.m.—Display area opens.

12:30 p.m.—Concert by Marine Corps Recruit Depot Band.

1 p.m.—Award ceremony.

Opening remarks by W. E. Magnuson, master of ceremonies and chairman, Convair Craftsmanship program.

Charles Cordell brings welcome from San Diego 200th Anniversary committee.

Mayor Frank Curran presents greetings from City of San Diego.

Maj. Gen. Louis L. Wilson Jr., vice commander, Air Force Space and Missile Systems Organization, presents Air Force Sustained Craftsmanship Award.

De Von E. Biggs, NASA Pasadena office, extends NASA congratulations.

Jack L. Bowers, president, speaks for Convair division.

Magnuson gives closing remarks.

5:00 p.m.—Display area closes to public.

SAMSO V. Cmdr. Presents Coveted Sustained Award

Maj. Gen. Louis L. Wilson Jr., who will present the U.S. Air Force's coveted Zero Defects Sustained Craftsmanship Performance Award to Convair division today, has been vice commander of the Air Force Space and Missile Systems Organization since August, 1968.

He formerly served four years at U.S. Air Force Headquarters as deputy director of operational requirements and development plans in the office of the deputy chief of staff for research and development.

During this assignment, he worked primarily on conceptual plans for the AMSA (advanced manned strategic aircraft), the F-X (advanced tactical fighter), and the Advanced ICBM.

General Wilson was graduated from the U.S. Military Academy at West Point in 1943 and completed flying school while at the Academy.

He was assigned to the 358th Fighter Group which was transferred to the Eighth Air Force in England for bomber escort duty in October, 1943, then, after being shifted to the Ninth Air Force just prior to D-Day, flew close air support for the 3rd Army until the end of World War II.

After serving with the Fifteenth Air Force at Colorado Springs, Colo., from 1946 to 1948, General Wilson served from 1948 to 1953 with the 509th Bombardment Wing and helped organize the 6th Bombardment Wing at Roswell, N.M. During this period, he was a B-29 and B-36 squadron commander.

He became deputy director of



MAJ. GEN. WILSON

personnel at Eighth Air Force Headquarters, Fort Worth, Texas, in 1953, and director of operations for the 380th Bombardment Wing at Plattsburg, N.Y., in 1955. He returned to Eighth Air Force Headquarters, then at Westover AFB, Mass., in 1957 where he had assignments as director of plans and as inspector general.

General Wilson became commander of the 4081st Strategic Wing at Ernest Harmon Air Base, Newfoundland, in 1960, and was reassigned two years later to Strategic Air Command Headquarters, Offutt AFB, Neb., as chief of the plans division. He was transferred to Air Force Headquarters in Washington in 1964.

His military decorations include the Legion of Merit with cluster, Distinguished Flying Cross, Air Medal with 18 oak leaf clusters, Air Force Commendation Medal, and Croix de Guerre.

UNITED STATES AIR FORCE

ZERO DEFECTS PROGRAM

SUSTAINED PERFORMANCE

Craftsmanship Award

TO

GENERAL DYNAMICS CORPORATION, CONVAIR DIVISION

AND ITS EMPLOYEES

IN RECOGNITION OF SUSTAINED SUPERIOR PERFORMANCE
THROUGH INDIVIDUAL CRAFTSMANSHIP REFLECTING OUTSTANDING ACHIEVEMENTS,
INCREASED EFFICIENCY AND ECONOMY FOR THE PERIOD

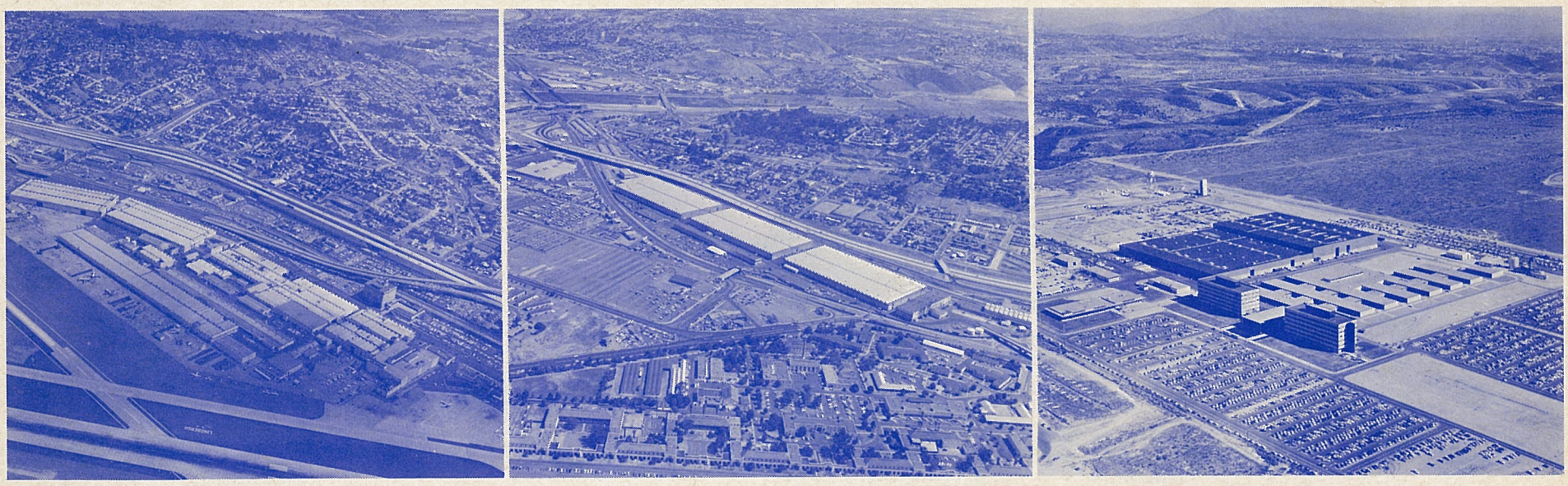
MAY 1968 - APRIL 1969

Presented this 6th day of December 1969

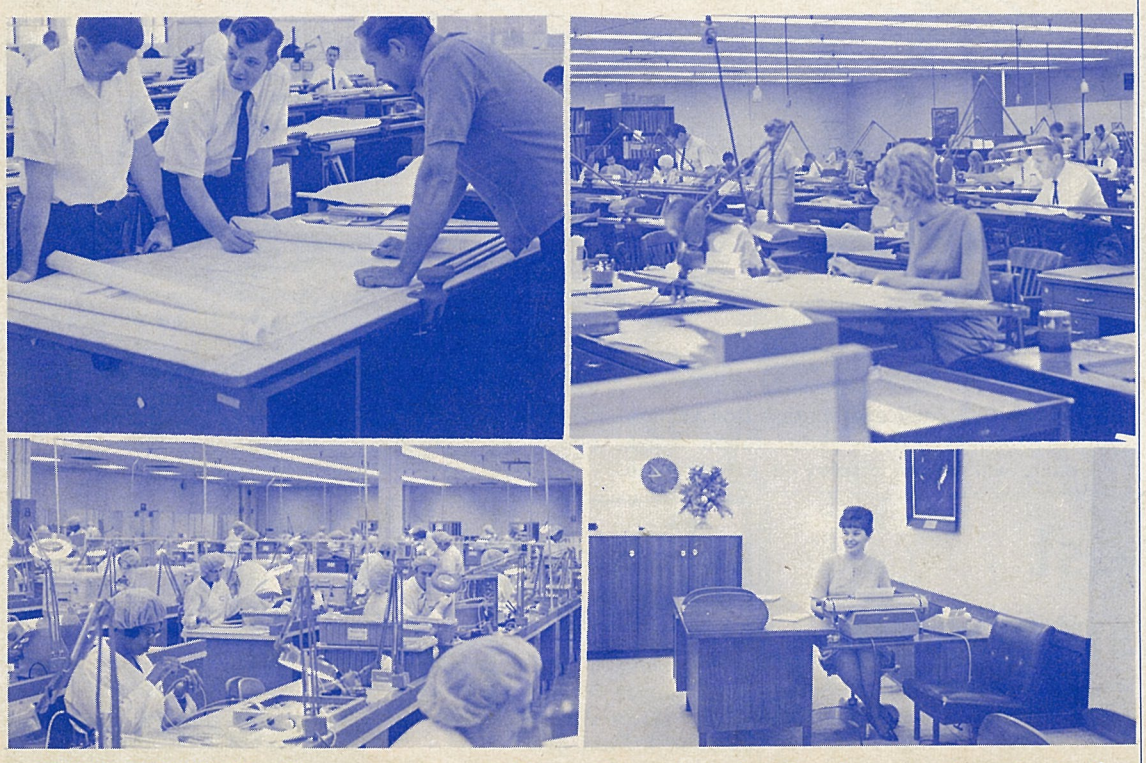
James Ferguson GENERAL, USAF
COMMANDER
AIR FORCE SYSTEMS COMMAND

1769-1969 San Diego 200th Anniversary

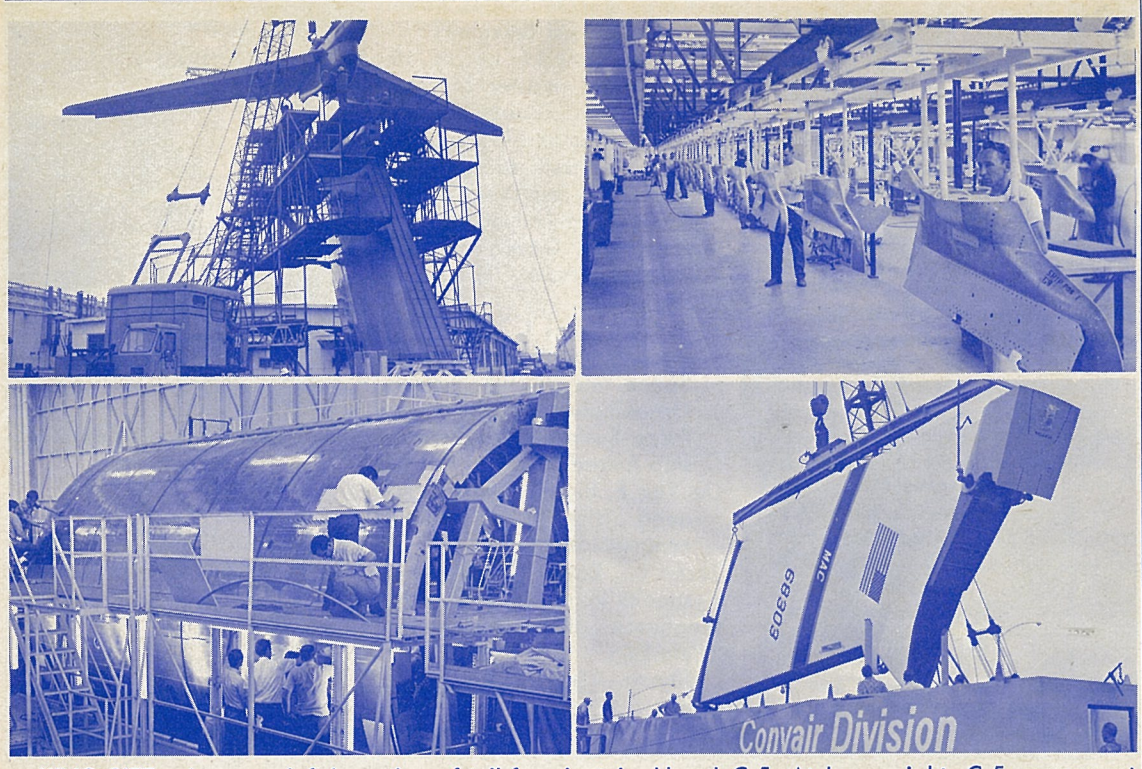
1769-1969 San Diego 200th Anniversary



"SEMI-COLLEGIATE"—At left is Convair Lindbergh Field plant (Old Campus); center is Plant 19 (Middle Campus); and at right is Kearny Mesa plant (New Campus). Combined they represent not only enormous manufacturing capability, but through their people a unique combination of talent and skill.



BEHIND THE WALLS—These are scenes at Kearny Mesa plant, but they have counterparts at other facilities. Upper left is typical of engineering areas and lower right is typical of business offices.



KING SIZE—At upper left is mating of tail for giant Lockheed C-5. At lower right, C-5 component is readied for shipment. At lower left crews work on fuselage for DC-10 which Convair builds for Douglas. At upper right are F-111 components, built at Plant 19 for Fort Worth division.

Convair Likened To a University

If Convair were a university—which indeed it resembles—Lindbergh Field plant which you visit today probably would be called "Old Campus." This plant dates back nearly 35 years.

Plant 19 (a mile north on Pacific Highway) might be called something like "Middle Campus" (circa 1941) and the Kearny Mesa plant (10 miles north on Highway 395) "New Campus" (circa 1958).

Convair's "campuses" and ancillary facilities, such as the Harbor Drive Test Facility, with tow basin and supersonic wind tunnel, are peopled by a "student body" of some thousands of "underclassmen and upperclassmen" who are young and in their "undergraduate" years. Also in the thousands are the "graduate students and faculty members." The latter are products of colleges and universities from Ivy League to the Big Ten, Northwest conference to the South, though many are alumni of the "University of Convair" itself.

When a class graduates from a college or university, comparatively few students remain. They go on to study elsewhere or to seek employment where they can apply to advantage the theory they learned behind cloistered walls. Convair is fortunate—and its "students" are fortunte, too—in that most of them remain "on campus" indefinitely.

Even those who owe undergraduate allegiance elsewhere sooner or later come to regard Convair as "alma mater" too.

"Never quite thought of Convair as a 'university,' " one senior "faculty" member mused. (His "PhD" is strictly Convair, but don't knock it. His knowledge of practical engineering, tooling, quality control, manufacturing flow is profound.)

"However, if a university is a group of specialized colleges, with a bit of regrouping we could qualify. Heavens knows we have enough degrees around here—masters and PhDs—to serve as faculty. We've got qualified TAs (teaching assistants, bachelor degrees) all over the place, and we have the versatile educational services staff of instructors already in being.

"Of course, we're heavily science oriented, science and engineering. That would be our strongest college. Though we certainly could field a brilliant faculty of a School of Manufacturing, if the American Association of Colleges would accredit us. Our Medical School and Law School would be small, but high-powered. (We have top flight people in life sciences and, of course, the legal department is loaded with lawyers.)

"A School of Business would be simple to organize. There's plenty of that kind of talent. And there are other fields in which we would shine—a College of Computer Science, for example.

"As for special equipment, Cal Tech and MIT would beat us in some areas but we would hold our own overall, considering our supersonic wind tunnel, the high speed tow basin and all the wonderful exotic gear that Life Sciences uses."

The "senior faculty member" was dealing in fantasy, of course, but all he said was true and there is a great deal more to qualify Convair as an "Institution of Higher Learning."

Convair is short on ivy walls, "the shaven lawns of Oxford . . . the cricket field, the quad," but long on learning.

This Is Historic Ground

(Continued from Page 1)

neers pushing to and beyond the threshold of the art of design, but neither they nor the factory could bear to produce anything short of their very best. And the best proved far too expensive.

Although through the 40s and early 50s Convair outwardly continued its historic role as a builder of quality aircraft, back in one of the "top secret" areas of engineering a dedicated group assaulted the "state of the art" in a new field—missiles, big missiles. From this small but far-sighted effort, doggedly pursued on a comparative shoestring of research dollars, developed the revolutionary Atlas intercontinental ballistic missile.

In a crash effort in the mid-50s the Atlas program developed from a handful of engineers to a work force of 10,000 in early 1958 when the team occupied a new plant on Kearny Mesa. These were exciting times. Atlases and facilities were built at the same time. Within four years 119 Atlases were built; employment soared to 32,500; missiles were deployed across the country to serve as the nation's nuclear deterrent for a critical period in history.

Atlas placed itself in orbit in 1958 and beamed a Christmas message from President Eisenhower to the Free World. Later John Glenn opened up manned flight for Americans by riding into space aboard Atlas-Mercury.

The years that followed saw the Atlas effort branch out in many directions, orbiting satellites, cameras to the moon and planetary probes. Chief among new concepts developed was Centaur, an entirely new upper stage, powered by liquid hydrogen.

Today the missile field continues of high importance in Convair's total effort. Recently Centaur was selected for advanced modification which will open new worlds to conquer. At the same time aircraft still are high on the business list—enormous tail sections for the Lockheed C-5 transport, fuselages for the giant Douglas DC-10, important components for the F-111 sweep-wing fighter assembled at Fort Worth division.



"That one is mine . . . the one with its mouth open."

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 22, No. 24 PUBLISHED BY GENERAL DYNAMICS CORPORATION 7178 Wednesday, December 17, 1969

New Hope Seen For World Cooperation

For all Americans, this has been a year of proud achievement in the heavens and renewed hopes on earth. The landings on the moon and the exploratory flights past Mars have opened vast new horizons. Let us hope that they foretell new opportunities for international cooperation and for a better life for all mankind.



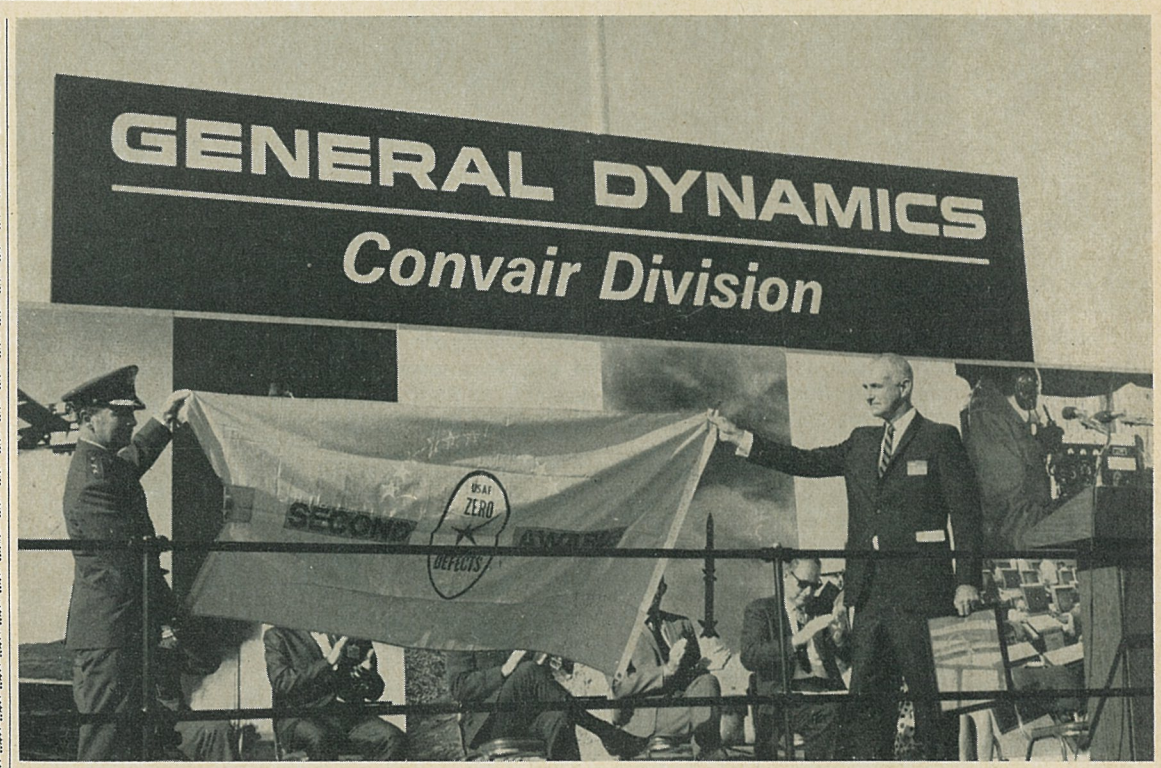
On earth, the quest for peace grows stronger. The pace of the conflict has slowed and international discussions, however tedious, raise cautious hopes for the future.

At this season, it is fitting that we renew those hopes. For nearly 2,000 years, Christmas has been the time for restoring our faith and for recalling the importance of "Peace on Earth, Good Will to Men."

Let us pray that, in the year ahead, these words may come to have even greater meaning.

To all of you who have contributed so much during the past year, very best wishes for a happy, healthy and joyous holiday and a rewarding 1970.

Roger Lewis
President, General Dynamics Corporation



BANNER HONORS—Maj. Gen. Louis L. Wilson Jr., vice commander of Air Force Space and Missile Systems Organization, presents Air Force Zero Defects Program Sustained Performance Craftsmanship Award banner to Jack L. Bowers, Convair division president. General Wilson said he hopes it is first of many to be earned by division.

Hourly Dental Plan Will Begin Jan. 1

A comprehensive Dental Plan for Convair hourly employes will go into effect Jan. 1, 1970.

The plan will cover all hourly employes and their dependents, except those employes represented by the International Union of Operating Engineers.

The employes do not make any contribution to the plan premiums and no special sign-up is necessary.

There will be a $25 deductible on covered dental expenses per person in each calendar year, after which the plan will pay 80 per cent of most additional covered expenses. In the case of charges for inlays, gold fillings, crowns, including precision attachments for dentures, and fixed bridgework, the plan covers 50 per cent of expenses.

Covered dental expenses include, but are not limited to, oral examination, including scaling and cleaning of teeth; x-rays; extractions; fillings; anesthetics administered in connection with a covered dental service; peridontal treatment; space maintainers; initial installation of partial or full removable denture to replace one or more natural teeth extracted while the individual is insured under the plan; and injection of antibiotic drugs by the attending dentist.

Among procedures which are not covered are charges for treatment by other than a dentist, except that a hygienist may scale teeth under the supervision of a dentist; charges for services and supplies that are partially or wholly cosmetic in nature; and charges for orthodontic treatment, including correction of malocclusion.

There is also no payment for charges for any dental procedure that is covered under the basic or major medical plan. For example, if teeth are injured or affected in an accident, this is

(Continued on Page 2)

F-111 Proves 'Star' of Show At LF Display

A variable-sweep-wing F-111 fighter from Edwards AFB was biggest attraction of the day at Convair division's Products Display show Dec. 6 at the Lindbergh Field plant.

Employes, members of their families, and other guests lined up to climb portable stairways on both sides of the F-111 cockpit to get a first-hand look at the pilot's controls.

Convair produces weapon bay fuel tanks, 600-gallon external fuel tanks, forward electronic bays and other fuselage sections, a variety of armament-carrying and fuel-tank pylons, wing pivot fittings, and about 1,000 different pieces of ground support equipment for the F-111 under subcontract from Fort Worth division.

Lines of visitors also formed to file through the NASA Craftsman Ship, a trailer filled with exhibits on the Apollo lunar landing program.

Other attention-getting products included ocean data station Bravo, F-102 and F-106 aircraft, a display of Convair-produced F-111 parts, giant C-5 empennage sections, and Atlas and Centaur space launch vehicles.

DC-10 fuselage assembly operations in Bldg. 3 were open to view with an adjacent exhibit on the tri-jetliner also attracting wide interest.

Historical photographs of the Lindbergh Field plant and early Convair aircraft and artists' drawings on present General Dynamics products were featured in a special walk-through exhibit.

Convair Quality Effort Praised

The Air Force Zero Defects Sustained Craftsmanship Performance Award which Convair division received Dec. 6 was likened to a "first oak leaf cluster to the original Craftsmanship Award" by Maj. Gen. Louis L. Wilson Jr., vice commander of the Air Force Space and Missile Systems Organization.

General Wilson presented the award and an accompanying banner to Jack L. Bowers, Convair division president, for employes of the division in ceremonies during an all-day Products Display at the Lindbergh Field plant in conjunction with San Diego's 200th Anniversary celebration.

"The difference in achieving this particular recognition lies in that word 'sustained,'" General Wilson pointed out. "The requirements for the basic Craftsmanship Award are stiff—but 'sustaining' is stiffer. Not only must the original high standards be maintained; they must be improved."

General Wilson noted that the division had reduced the number of defects to 14.7 per 1,000 manhours worked and increased employe participation in the program to 97.9 per cent during a year which had seen an influx of new programs and new people.

"These figures indicate an impressive accomplishment in sustaining high-level performance," he said. "Even more impressive, however, as proof of the craftsmanship that is an integral part of the product here is the record being made by systems turned out by the Convair division."

He noted the 47 consecutive successful space launches by Atlas SLV-3s and the role of Convair boosters during the year in launch of the Mariner 6 and 7 spacecraft, an OV1 satellite with 41 separate space experiments, an Applications Technology Satellite, and five Advanced Ballistic Re-entry Systems launches.

"The boosters which you will be turning over to us in 1970 also are slated to play a significant role in our space and missile programs," he said.

"Two are to be used in March 1970 to send two more Mariner

(Continued on Page 2)

NASA's Dr. Mueller Joins Dynamics



DR. GEORGE MUELLER

Dr. George E. Mueller, former associate administrator for manned space flight for the National Aeronautics and Space Administration, has been appointed a vice president of General Dynamics.

Dr. Mueller's resignation from NASA was effective Dec. 10 and he assumed his new position immediately.

He will have responsibility for system programs and development and will report to Roger Lewis, president.

"We are delighted that Dr. Mueller's unique scientific and engineering talents will continue to serve the nation's technological progress," Lewis said.

Dr. Mueller (pronounced like Miller) assumed direction of

(Continued on Page 4)

Year-End Holidays Set for Employes

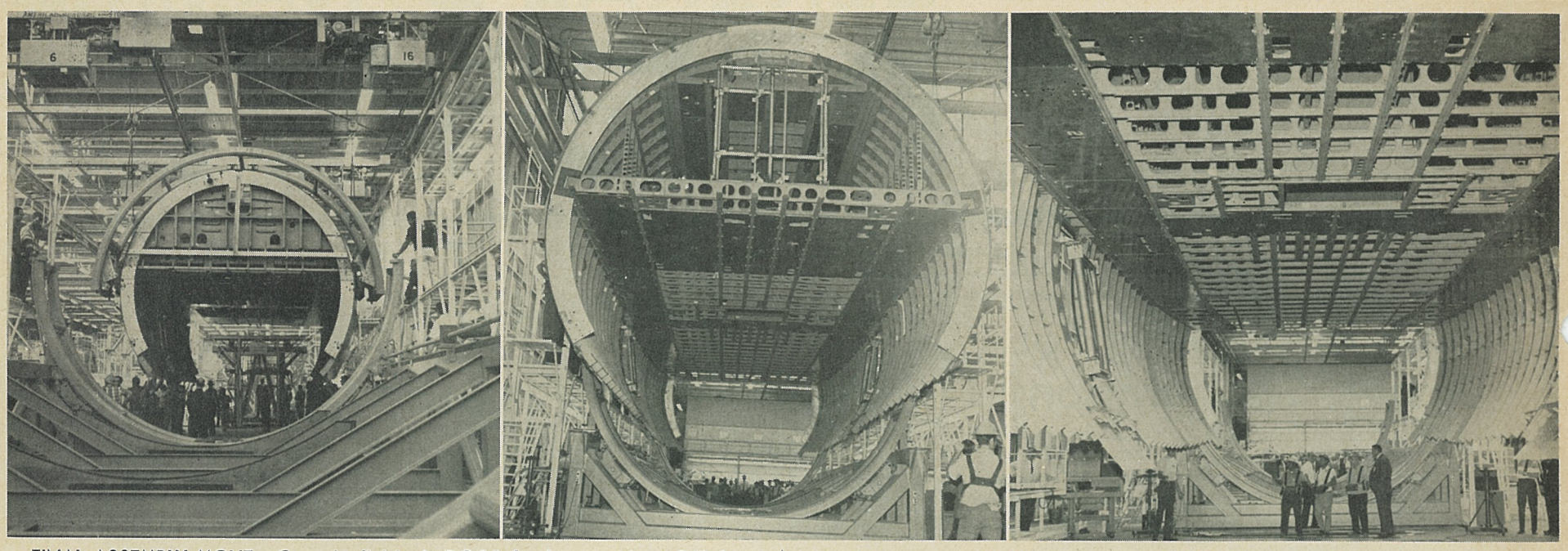
There are two "long weekends" coming up for most Convair division and Electronics-SD employes.

Thursday and Friday, Dec. 25 and 26, are Christmas holidays and, one week later, Jan. 1 and 2 will be New Year's holidays.

Guard, fire protection and other employes required to work will be notified by supervision. Paychecks will be given out the Wednesday before the normal pay day.



CORPORATE GIFT—Jack L. Bowers, right, Convair division president, and D. C. Prim, Electronics-SD manager, present $50,000 gift from General Dynamics to San Diego United Crusade. Receiving check is William Quirk, Crusade chairman. Convair and Electronics-SD Employe Con-Trib-Clubs also have made pledges to United Crusade.



FINAL ASSEMBLY MOVE—Convair division's DC-10 fuselage sections C/D have reached final assembly stage at LF plant. Above sequence of photos illustrates magnitude of transfer operations from ⅔ barrel assembly to final assembly fixture. Special "turn-over" fixture allows entire fuselage to be inverted during final assembly process. Multi-ton structure is lifted by four five-ton capacity remote control cranes operating in tandem. Right photo is view from inside inverted fuselage sections. Note how men are dwarfed by size of component. Tri-jetliner fuselage assembly is being performed in Bldg. 3.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during Dec.

Thirty-year: Dept. 031, G. L. Scheibel Jr.; 149, J. W. Dixon; 250, W. H. Apple; 400, C. L. Pogorele, A. M. Walden, J. S. Williams; 565, G. S. Oliver; 567, E. Fitzsimons; 578, W. L. Dittman.

Twenty-five-year: Dept. 005, G. D. Carroll; 016, Laura L. Wood; 027, W. C. Stewart; 031, A. A. Martin; 149, Bertha Alongi, J. W. Smith; 170, M. Fullerton; 401, J. E. Olson; 840, Inez L. Markel; 979, R. W. Lucas.

Twenty-year: Dept. 001, C. M. Barnard; 015, P. E. Ewan; 027, E. Weems, 045, J. C. Furtado; 057, A. D. Bush; 059, F. L. Maxwell Jr.; 149, B. G. Kratz, C. E. Myers; 193, C. E. Ulrey; 400, A. L. Snyder; 401, G. A. LaFond; 541, R. R. Vincent; 780, C. F. Brown; 860, W. R. Osgood.

Fifteen-year: Dept. 001, W. W. Nobiensky; 002, Florence LaRochelee; 027, Leo H. Wilson; 046, N. Steele; 130, R. Burgad, Lillian M. Truex; 401, M. T. Nadeau, J. L. Norris; 407, E. D. Cordle; 517, W. E. Butterfield; 518, Doris T. Mondaca; 524, Joyce E. Souders; 550, H. L. Newman; 565, O. C. Harvey; 575, G. F. Miller Jr.; 579, G. A. Shuler; 761, C. E. Dayton; 810, W. Hesseltine; 964, R. O. Joiner.

Ten-year: Dept. 002, J. C. Charfauros; 027, R. R. Green; 059, Eleanor M. Clark, Dolores Hostetler; 101, Dolores LaPalme, W. L. Varner; 141, G. Gross; 144, W. M. Frogge, F. Piersall Jr.; 191, J. I. Morioka; 195, D. Stearns; 250, L. V. Deck; 460, D. E. Beamesderfer, L. O. Bruun Jr.; 508, R. A. Smith; 515, Anne E. Allen, Jane S. Green, Naomi Greenwood; 517, B. H. Kilander; 524, Irene C. Romag; 526, Irene P. Erickson; 588, R. H. Trelease; 595, G. Wang; 596, W. A. Marggraf; 598, J. K. Daniels; 733, E. S. Abbott Sr.; J. A. Maglio; 780, Pearl E. Ehrcke; 831, J. A. Morrell; 954, W. C. Hill; 979, P. J. Poulos, C. Serowik; 985, B. Riesbol; 986, T. J. Dangelo Jr.; 988, R. F. Will.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Nov. 26.

Dept. 027, A. R. Anderson, $23.70; 831, R. D. Behlman, $15; 002, H. B. Bender, B. J. Rogers, $119.60 each (joint award); 002, E. F. Cabana, $15; 250, E. C. Cheney, $15; $27, J. G. De Lara Jr., $121.90; 027, W. H. Gifford, $58.80; 250, D. S. Graves, $15; 027, R. J. Guidry, $47.40 (two awards); 553, C. S. Hodgins, $133.20; 015, R. V. Leonard, $15; 401, J. L. May Jr., $15; 019, M. T. McNeel, $15; 780, L. M. Rapp, $25; 130, H. H. Werdelman, $25; 027, F. J. Woods, $30.80.

Employe Suggestion awards approved for the week ending Dec. 5.

Dept. 031, R. R. Atkinson, 756, A. G. Johnson, $26.30 each (joint award); 027, R. Bethel, A. M. Vejar, $17.95 each (joint award); 780, N. S. Cole, $52.50; 250, J. T. Dragonetti, $15; 149, J. G. DuBois, $77.30; 027, M. Estes, $31.50; 840, R. L. Holley, $15; 142, I. L. LeDuc, $15; 027, E. E. Lewis, $42.10 (two awards); 149, A. Lizotte, M. Silevitch, $31.05 each (joint award); 019, B. D. McAfee, $30; 019, M. T. McNeel, $29.80; 027, C. W. Meinsen, $26.90; 401, F. Morales, $15; 027, D. R. Noon, $97.00 (three awards); 049, W. C. Pahl, $30 (two awards); 142, G. A. Paxson, $29.30; 015, W. L. Woodward, $15.

Personals

CONVAIR

The expressions of sympathy and acts of kindness by Convair friends are deeply appreciated.

William Shattuck, Dept. 401-5

* * *

The family of the late Dorothy Torano acknowledges with grateful appreciation your kind expression of sympathy.

Phil Torano, Dept. 250-5

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 104-61, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Invention Disclosures

CONVAIR

BARLOW—G. T., Dept. 506. Protected Pressure Seal.

GODENSCHWAGER—E. F., Dept. 591. Adaptive Propulsion Optimization System.

MAWSON—T. J., Dept. 553, J. L. WOODS, Dept. 062. Data Projection Aided Compiler.

NOWKA—R. D., O. PULLINS, Dept. 400-3. Router and Routing Fixture for Door Openings.

RODENRYS—J. J., Dept. 170-1. Cardiac Parameters Analysis.

Rider-Driver

CONVAIR

RIDE WANTED—From 74th and University Ave., La Mesa, to Lindbergh Field plant, 7 a.m. to 3:30 p.m. shift. Call J. W. Keais, ext. 2146 LF or home, 469-5781.

RIDE WANTED—Will ride or share to and from Lemon Grove. 7 a.m. to 3:30 p.m. shift. Lindbergh Field plant. Call Mike Irvine, ext. 1715 or (home) 463-4952.

Retirements

CONVAIR

BEAR—Marshall D., Dept. 541-0. Seniority date Aug. 31, 1962, retired Nov. 26.

BERKHEIMER—Wilbur L., Dept. 002-0. Seniority date Nov. 12, 1941, retired Nov. 26.

BLAIR—Paul D., Dept. 533-2. Seniority date April 15, 1957, retired Sept. 30.

CHAMBERS—Thomas E., Dept. 578-3. Seniority date Sept. 1, 1961, retired Nov. 17.

DAVIS—Bertha T., Dept. 988-2. Seniority date March 1, 1951, retired Oct. 31.

FRINK—Emory B., Dept. 985-1. Seniority date June 23, 1959, retired Sept. 29.

GRAHAM — Robert J., Dept. 059-4. Seniority date May 6, 1948, retired Sept. 22.

HARLAND—Raymond V., Dept. 142-1. Seniority date Aug. 25, 1959, retired Oct. 27.

HAWKINS—Benjamin K., Dept. 985-3. Seniority date April 25, 1956, retired Sept. 29.

LUCAS—Peter P., Dept. 250-4. Seniority date July 22, 1959, retired Nov. 26.

NOWRY—Samuel E., Dept. 195-9. Seniority date July 16, 1941, retired Nov. 26.

OBERDIEAR—Olena J., Dept. 170-8. Seniority date Nov. 21, 1956, retired Nov. 26.

PASEK—Richard C., Dept. 511-6. Seniority date July 15, 1940, retired Oct. 23.

RAITT—Robert, Dept. 015-0. Seniority date July 23, 1958, retired Nov. 14.

SCOTT—Paul A., Dept. 193-3. Seniority date Oct. 26, 1950, retired Nov. 26.

SMELTZER—Theodore F., Dept. 731-0. Seniority date Jan. 12, 1961, retired Nov. 26.

Lost & Found

CONVAIR

FOUND—Ladies wristwatch, near Gate 6 at Kearny Mesa plant about Nov. 14. Call Joe Vicari, ext. 3794 KM.

Births

CONVAIR

FUSCO—Daughter Trina Eileen, 9 lbs. 5½ ozs., born Nov. 18 to Vonda Fusco, Dept. 131-4.

Deaths

CONVAIR

GOLEM—Henry R., retired Feb. 1957. Survivors include his wife, Lorraine, two sons Richard and Darrel, and seven grandchildren.

HIGGINS—Frank T., retired Jan. 4, 1957, Dept. 25-1, died Nov. 12. Survived by his wife, Violet.

KEENAN — James, retired Oct. 15, 1964, Dept. 133, died Nov. 4. Survived by his sister, Mary.

LOCK—Alfred A., Dept. 142-1, died Nov. 23. Survivors include his wife, Gloria, and brother, A. P. Lock.

MAKER—Phillip P., retired Jan. 20, 1961, Dept. 25-4, died Nov. 24.

SILENECK—William, Dept. 015, died Nov. 25. Survived by his wife Helena and son.

Convair Quality Effort Praised

(Continued from Page 1)

spacecraft to make new discoveries on the planet Mars. In August, another Orbiting Astronomical Observatory will be launched by Atlas-Centaur. About nine ABRES launches will be spaced throughout the year . . . And the Atlas also will be used for Space Experiments Support Program launches to put into orbit a variety of space experiments for a number of government agencies.

"One of the most interesting and significant developments of 1970 will be first use of Atlas in launching civilian communications satellites. INTELSAT IV, a larger improved COMSAT, is to be launched next February. This expansion of the SLV-3 into the field of civilian space applications is a significant testimonial to the reputation which this booster has earned for reliable performance."

General Wilson said tremendous amounts of money, time, and talent "ride" on Convair boosters. "This places upon all of you here at Convair division of General Dynamics a heavy responsibility for superior, reliable craftsmanship."

DeVon E. Biggs of NASA's Pasadena office said future planning is to use Convair's Centaur to explore other planets and that the present Centaur modernization program envisions additional uses in the Applications Technology Satellite and Orbiting Astronomical Observatory programs.

"On behalf of NASA, I wish to thank you for your dedicated efforts," he said. "We are looking forward to our continuing relationship in providing a viable civilian space program for the benefit of all mankind."

Councilwoman Helen Cobb brought a salute to Convair from the city.

Charles E. Cordell, president of San Diego's 200th Anniversary observance, presented commemorative medallions to Bowers; General Wilson; Biggs; Ronald Rovenger, NASA resident representative at Convair; Col. Charles Merz, Defense Contract Administration Services district commander in San Diego; Maj. Reuben Fleet, USA (ret.), who brought Convair's predecessor firm to San Diego 34 years ago, and others.

Yule Dinner-Dance Scheduled Dec. 20

More than 500 Electronics-SD employes and guests are expected to attend a Christmas dinner-dance Dec. 20 in the Fleet Room of the Hilton Inn on Mission Bay.

The event will be sponsored jointly by the Electronics-SD Recreation Association and the Electronics - SD Management Club. All Electronics-SD employes, family members, and guests are invited.

Tickets are $4 each and are on sale through Management Club boosters.

A social hour will begin at 7 p.m., top sirloin of beef dinner will be served at 8 p.m., and Buster Carlson's 10-piece orchestra will play for dancing from 9 p.m. to 1 a.m.

Giant Hydraulic Hoist Installed To Lift DC-10 Fuselage Sections

A 25-ton electro-hydraulic hoist and platform, built in West Germany to meet Convair specifications, was lowered into position in a 55-foot-long steel-reinforced concrete-lined pit near the north flight gate at Convair division's Lindbergh Field plant early this month.

The giant hydraulic hoist will be used to lift DC-10 fuselage sections on their transporters from ground level 11 feet to cargo floor level of the Aero Spaceliners' Super Guppy that will deliver them to Douglas Aircraft Co. in Long Beach.

Eisenwerk Schroder of Munich, Germany, fabricated the steel hoist and platform under subcontract from Trepel Systems of Portland, Maine. It was trucked to Hamburg along the autobahn, then shipped to San Diego in the hold of the freighter Blumenthal.

A hydraulic power unit for use with the hoist was manufactured by the Kenett Corp. of Newton, Mass. Preparation of the pit foundation and installation of the hoist was handled by L. J. Nineman Construction Co. of San Diego.

John Ruzich, general supervisor of shipping for Convair, said the hoist is designed so that its platform can be tilted for perfect alignment with the cargo floor of the Super Guppy.

The hoist has a 32,000-pound lifting capacity and will operate on much the same principle as those used in service stations to lift automobiles.

Wheels on the DC-10 fuselage section transporters will be removed after they are rolled on the hoist platform and the fuselage sections and transporters will be pulled along rails into the Super Guppy by an on-board winch. The transporters then will be pinned into place to prevent in-flight movement.

Three different transporter configurations will be used for transport of C-D, E, and F-G fuselage sections. Each is designed to withstand six-G forces, to meet FAA requirements.

Irv Hodge of plant engineering was project engineer for design of the transporters, which are being fabricated by C. L. Stegal Co. of Pacoima. Largest of the three configurations will carry the C-D section, which will be about 57 feet long and 20 feet in diameter.

Four of the fuselage section transporters have been delivered and two others are on order.

Hourly Dental Plan to Begin

(Continued from Page 1)

covered under major medical and would not be covered under the Dental Plan.

This means that if a dependent is not enrolled in the major medical plan and has teeth injured in an accident, the Dental Plan will not cover the injury.

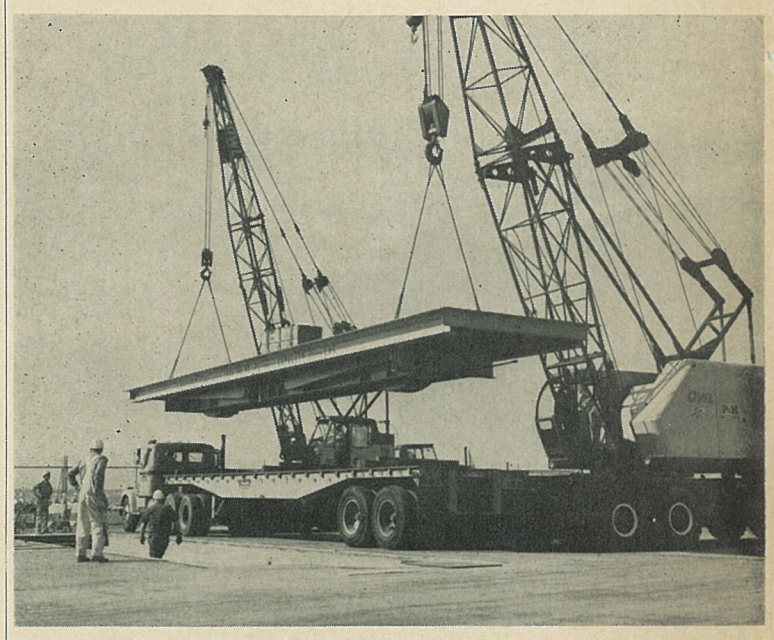
Paul Allgire, supervisor of employe benefits, emphasized that employes should determine in advance what dental procedures are covered under the Plan and which are not.

Claim forms are available at employe benefits offices.

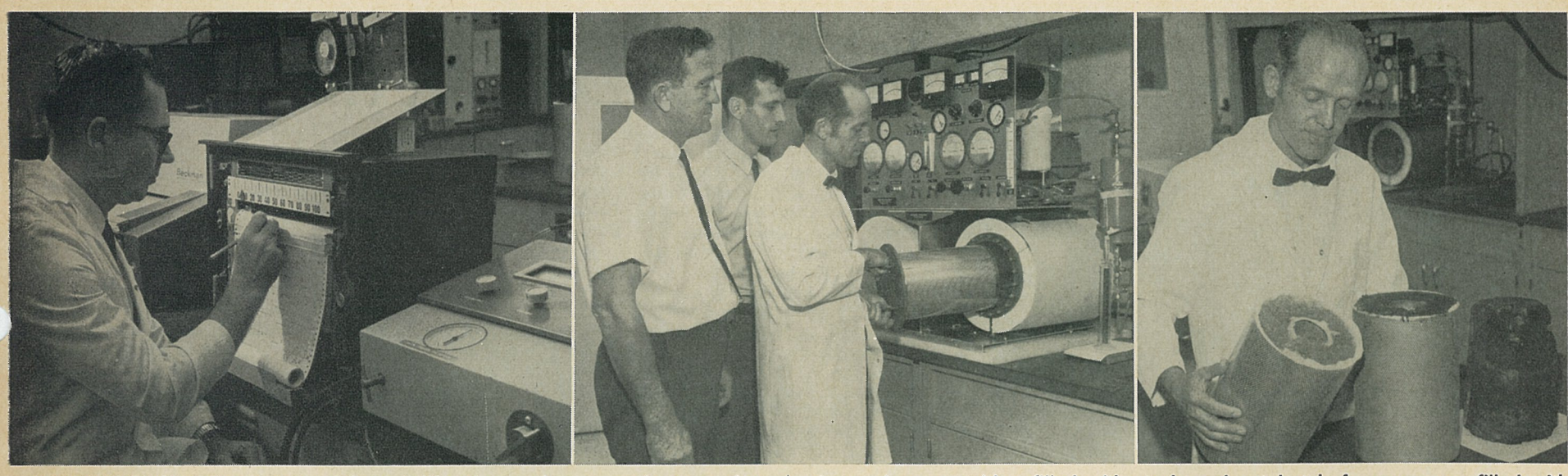
An information booklet on the Plan will be distributed to all Convair hourly employes covered around Jan. 1, 1970.

For information call employe benefits, ext. 2657 KM.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



FUSELAGE LIFTER—Cranes move electro-hydraulic hoist and platform into place in pit adjacent to north flight line at Convair division's Lindbergh Field plant. Hoist will be used in loading DC-10 fuselage sections into Super Guppy for air delivery to Long Beach.



BREAKTHROUGH—Roy Holmes of Convair life sciences department inserts carbon collection cartridge into Convair-developed reduction unit that will convert carbon dioxide to carbon and water (center photo) as W. R. Burks, left, and Lenwood G. Clark of NASA Langley Research Center observe. In photo at left, Ed Keller, senior engineering chemist, uses gas chromatograph to monitor reaction. Holmes, in right photo, shows cartridge filled with steel wool catalyst before use, one filled with carbon after being removed from reactor, and carbon block that has been removed from cartridge. Development helps pave way for life support systems for long-term space missions. Numerous materials were used to find right combination for high temperature reaction.

Source of Oxygen For Spacecraft Involves Converting Carbon Dioxide

Convair division has developed a reliable reduction unit to convert astronaut-exhaled carbon dioxide into carbon and water. The water then electrolytically can be broken down into oxygen and hydrogen for reuse.

The unit, developed during the past 16 months under a contract from NASA Langley Research Center, is considered a significant milestone in the development of life support "hardware" for long-term missions in space.

Roy Holmes, project leader and a design specialist in Convair's life sciences Dept. 592-0, worked with numerous materials before finding suitable combinations for use at the 1,200 to 1,300 degrees F. required for the reaction.

Another major problem was to develop a means of preventing carbon formed in the reaction zone from migrating to other parts of the system. Iron acts as a catalyst, making unprotected iron-containing materials unsuitable for reactor construction.

Thirteen catalyst cartridges were tested in a single-reactor development unit before the dual-reactor prototype unit to be delivered to NASA was designed. Nickel-plated perforated stainless steel cartridge shells, lined internally with quartz-wool matting, were produced to retain the carbon and avoid external catalytic action.

The cartridges are packed with steel wool, which is predominantly iron, as a catalyst. Although not consumed by the reaction, the steel wool diffuses into the amorphous carbon, causing a solid block to be formed in the reactor cartridge.

The dual-reactor unit is designed to convert the 9.28 pounds of carbon dioxide output per day from four men into waste carbon and water. The water then can be reduced to oxygen for rebreathing and hydrogen gas for "refueling" of the reaction process.

In laboratory tests at Convair's Lindbergh Field plant, carbon dioxide and hydrogen were fed into the development and prototype units from storage bottles, with automatic feed controls regulating the flow.

Inconel-sheathed heaters, jacketed with copper to prevent catalytic action, fit into the core of the catalyst cartridges to provide reaction temperatures.

Carbon monoxide, methane, water vapor, and solid carbon are formed in the Bosch reaction (named for the 1931 Nobel Prize winner in chemistry). The carbon monoxide and methane reach equilibrium concentrations and are recycled continuously while the water vapor is condensed and removed from the reduction unit.

A gas chromatograph is used to monitor the hydrogen, carbon dioxide, methane, and carbon monoxide concentrations during laboratory tests. An infrared analyzer, sensitive to carbon dioxide concentration, regulates an automatic controller for metering feed gases into the reduction unit.

Holmes, a Convair employe since 1942 and a design specialist in the life sciences section since 1965, has been assisted by Ed Keller, a senior engineering chemist in materials and processes Dept. 572-3. The unit was fabricated by the process development group of Dept. 572-2 under the direction of Charles Maikish.

Supervision of the project has been under Robert C. Armstrong, M.D., manager of life sciences, and George L. Drake, chief of life support engineering.

Lenwood G. Clark, technical representative for the contract at NASA-Langley, and W. R. Burks, a NASA-Langley engineering technician, were at Convair's Lindbergh Field plant recently to observe a 120-hour performance demonstration of the prototype unit.

The unit will be shipped to Langley and installed in the Integrated Life Support System (ILSS) that was designed and fabricated by Convair and delivered to NASA in 1965. The original Bosch reactor in the ILSS utilized a stack of rotating iron catalyst plates. Separating carbon from the plates and transporting it to a collection point has proven impractical.

Holmes will go to NASA-Langley to assist with installation, checkout, and operational demonstration of the new unit in the ILSS.

"There have been periods of frustration with the unit during the past 16 months—but now it's running like a dream," he commented prior to start of the 120-hour test for the NASA representatives.

Holmes said the Convair program has demonstrated feasibility of developing an efficient and reliable flight-qualified reduction unit for use in life support systems for long-duration space missions.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

Next GD/NEWS Issue Will Be on Jan. 7

Due to conflicts between year-end holidays and publishing schedules, GD/NEWS will slip its regular bi-weekly sequence this month. Instead of appearing Dec. 31, the next issue will be on the stands Jan. 7.

Re-entry Vehicle Boosted by Atlas

An experimental re-entry vehicle in the Advanced Ballistic Re-entry System (ABRES) program was launched Dec. 3 from Vandenberg AFB on an Atlas F booster. The re-entry vehicle was sent down the Western Test Range in a test aimed at developing more effective vehicles for the ICBM force.

The launch was directed by the 6595th Aerospace Test Wing.

Canadair Demonstrates Surveillance by Drone

Production of 282 AN/USD-501 surveillance drone systems and associated ground equipment, with a value of more than $60 million, is now well under way at Canadair (Montreal) for the armed forces of Canada, United Kingdom and the Federal Republic of Germany.

The drone development was started by Canadair in 1961 on a shared cost basis with the Department of Industry, Trade and Commerce. In 1962, Britain asked to join with Canada in supporting this development and in 1965 the Federal Republic of Germany joined the other partners.

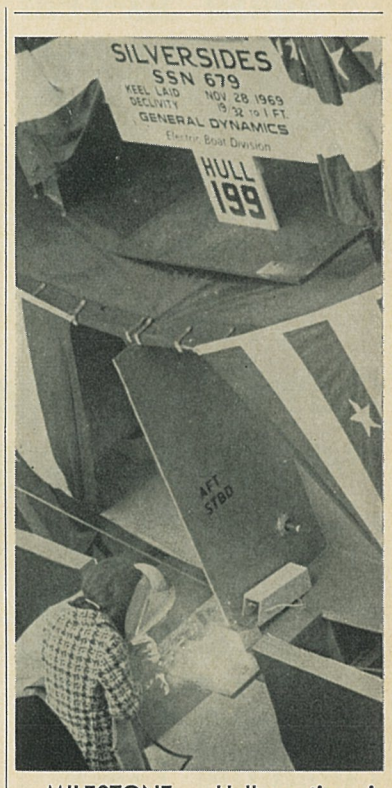
The drone system was demonstrated for a senior military group at the Canadian Armed Forces base at Shilo, Manitoba, recently.

The drone, more like a missile than an airplane, will fly over enemy territory on a pre-selected course, take photographs, and return to base to parachute to earth where its film is recovered in seconds. It is reusable, and because of the smallness of its size and relatively high speed it is virtually undetectable by enemy radar. It is about eight feet long and one foot in diameter, and its unique configuration (among other characteristics it has no wings) is believed to give it the highest probability of survival of any surveillance drone in existence. At launch it is given initial boost by a rocket motor. It is sustained in flight by a turbojet engine.

The demonstration was witnessed by military observers from Belgium, France, Italy, Holland, Sweden, Switzerland, the U.S., as well as senior officers of the military forces of the three partners in the program.

It was the 18th production model right off the assembly line, (as opposed to development models) fired in a series of user conformance trials. Since then seven other successful firings have been carried out. On some of the flights pictures were taken on conventional film. On others an infra-red sensing device was used.

The flight was over a 95 kilometer (59 miles) course and lasted eight minutes. The drone parachuted to earth approximately 100 yards from its homing beacon. This firing, and all of the others in the conformance trials series, was carried out under operational conditions by military members of the tri-partite group.



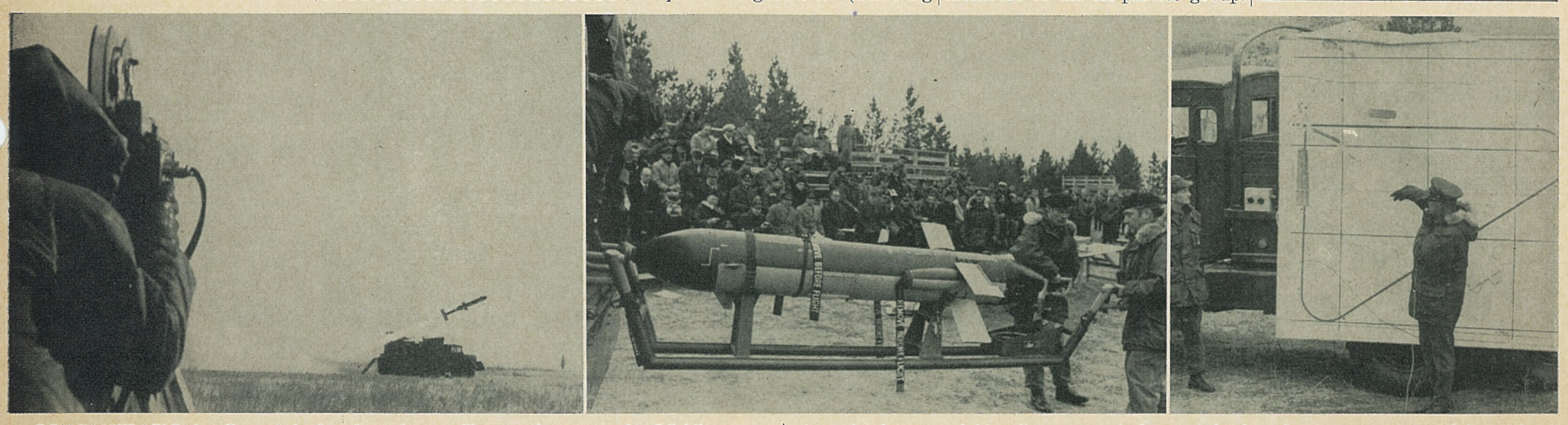
MILESTONE — Hull section is laid, marking official start of Navy's 100th nuclear powered submarine.

Hull Started For 100th Sub

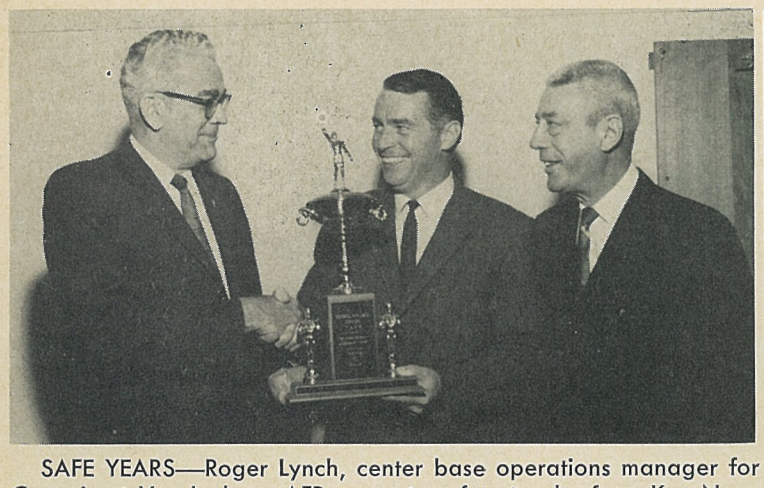
An 80-ton circular hull section was lowered onto keel blocks last month, marking the start of construction of the Navy's 100th nuclear-powered submarine. The event at Electric Boat division occurred just a few hundred feet from where nearly 15 years ago, the USS Nautilus ushered in the Navy's nuclear era with its historic message "under way on nuclear power."

Some of those in attendance last month were on hand when the Nautilus first went to sea Jan. 17, 1955, including its first commanding officer, now RAdm. Eugene P. Wilkinson, USN, Commander Submarine Flotilla Two.

The Navy's 100th atomic sub, whent it joins the Fleet in 1972, will be named the Silversides, after a World War II submarine that achieved a distinguished record in sinking and damaging more than 200,000 tons of enemy ships.



DEMONSTRATION—Canadair-developed surveillance drone made 95-kilometer flight for military observers recently in Manitoba, descending by parachute. After launch drone quickly disappeared from sight but its progress was followed on illuminated plot (right) that traced position on three-leg course.



SAFE YEARS—Roger Lynch, center base operations manager for Convair at Vandenberg AFB, accepts safety trophy from Ken Newton, director of launch vehicles, while John Hopman, chief safety engineer, looks on. Award was for base record of six years without lost-time accident.

Convair Employes at Vandenberg Establish Six-Year Safety Record

Convair operations personnel at Vandenberg AFB have been awarded a trophy for six years' operation without a lost-time accident.

The trophy was presented to Roger Lynch, manager of the base facility by Ken Newton, director of launch vehicles programs.

In a letter to Convair President Jack L. Bowers, Algie A. Hendrix, corporate vice-president, said:

"This achievement, which relates to 5,929,847 actual manhours worked accident-free, is even more commendable when considering the type of operation conducted at this facility.

"Our congratulations to you and all of the employes of the Vandenberg AFB operations for a job well done."

Convair Supervision Students Tour Douglas' Long Beach Plant

Ninety-four students from San Diego Evening College industrial supervision classes at Convair division and guests got a first-hand look at full-scale DC-10 tri-jetliner exterior and interior engineering mock-ups Nov. 18 during an evening tour of the Douglas Aircraft Co. plant in Long Beach.

The student group took two buses to Long Beach and were hosted by the Douglas Management Club for steak dinner in the plant cafeteria and a tour of DC-8 and DC-9 final assembly lines as well as the DC-10 product display area.

Many of the students making the tour work at Convair's Lindbergh Field plant on engineering and fabrication of DC-10 fuselages, which Convair builds under contract from McDonnell Douglas.

Ben Clawson, director of reliability and quality assurance for Douglas, briefed the group on the "total concept of quality" for the DC-10 program, including work to be accomplished for foreign customers by a customer quality requirements group.

"You at Convair can have a tremendous impact on quality of the DC-10," he commented. "Our quality reputation rests with you . . ."

The Convair group watched a film, "Dimension 10," on capabilities and features of the DC-10, the first of which is scheduled for its maiden flight next fall, and examined a full-scale interior mock-up of the "multi-market mainstay of the new jet age."

Computer Class Offers Training For Job Change

Convair division employes with a desire to become business computer programmers and who have completed at least one course in the data processing field may submit applications for a 12-week evening company-sponsored training program.

Those successfully completing the course will be considered for placement on the flat-salaried payroll as business computer programmers as openings occur. Order of placement will be based in part on how well the individual performed in the course.

Interested hourly or salaried employes may obtain applications from educational services offices. Phone Wayne Turner, ext. 491 LF; Bruce Bolen, ext. 2747 LF (AF Plant 19); or Jim Watt, ext. 1329 KM.

Completed applications should be mailed by Jan. 23 to G. O. Withem, chief of data systems, Mail Zone 170-10, for screening by business data systems supervision.

The computer programmer course will be taught by data systems Dept. 170-1 supervision. Educational services Dept. 130-3 personnel will assist.

Lynch Receives NMA Silver Knight Award

Roger Lynch, manager of Convair's Vandenberg Air Force Base operations, has received the Silver Knight Award, highest given by the National Management Association for excellence in management.

The award was presented by Ken Newton, director of launch vehicle programs, in ceremonies at the November VAFB Management Club meeting.

H. Cushman Dow, Convair division general counsel, delivered the featured address, discussing legal liability from space claims.

Convair Represented At IDEP Meeting

Bill Hansen, Dept. 562-2, and John Ona, Dept. 562-0, represented Convair division at the recent quarterly Interagency Data Exchange Program (IDEP) meeting at Le Baron Hotel in Mission Valley.

Approximately 25 members of IDEP's policy board, contractors advisory board, and area contractor coordinators met for four days with members of the policy board, National Calibration Standards Library, and representatives of the military services.

The meetings are held to determine operations and procedures for IDEP representatives and to plan future programs.

ASQC Names Speaker For Jan 12 Meeting

The San Diego section of the American Society for Quality Control will meet at 6:30 p.m. Jan. 12 at the Bronze Room, La Mesa.

Speaker will be S. W. Shepard, vice president, secretary, and general counsel of Rohr Corp. For information, call Eric Callard or Sam Petcher, ext. 2243 KM.

Group Engineer Becomes Citizen

Robert C. Harbison, Convair division Dept. 533-1 structural design group engineer, found his office decked out in red, white, and blue bunting Dec. 3 when he returned from federal naturalization ceremonies in which he became a U. S. citizen.

More than 200 friends and coworkers in DC-10 engineering groups had signed a big congratulatory card.

Harbison, a Convair employe for 12 years, and his wife, Hazel, are from Northern Ireland.

"I've been teasing her because she's still a foreigner," he commented. "Our three sons, all born in San Diego, have dual citizenship."

Harbison joined Convair in 1957, as a result of correspondence from other division employes from Ireland, after completing technical school in Ballymena, Ireland, and serving a five-year shop, drafting, and engineering apprenticeship at Belfast Tech.

After six months work with the Convair "foreign legion" while awaiting his security clearance, he joined the propulsion group for work on the Convair 990. Later he had engineering assignments on the F-111 wing, worked on engine nacelles and wing design for the Charger, was leadman on C-5 rudder and shroud panels, and was group engineer for F-111 modification "packages."

He spent several months last year at the Douglas plant in Long Beach on DC-10 fuselage design tasks and now is group engineer for DC-10 doors and jamb structures design.

In preparing for a test in November that led to his naturalization, Harbison studied American history and government two nights a week for four months at Clairemont High School.

"When we came to the U. S. in 1957 we planned to stay only three or four years," he said. "Now we plan to stay permanently."

NASA's Mueller Joins Dynamics

(Continued from Page 1)

NASA's manned space flight program Sept. 1, 1963, and has been responsible for the planning, direction, execution, and evaluation of the overall manned space flight program.

Included has been management authority Space Flight Center, Huntsville, Ala.; the Manned Spacecraft Center, Houston, Texas; and the John F. Kennedy Space Center in Florida.

Before joining NASA, Dr. Mueller was vice president of research and development for Space Technology Laboratories in Redondo Beach, Calif.

Dr. Mueller received his BS degree in electrical engineering from Missouri School of Mines in 1939, his master's degree in electrical engineering from Purdue University in 1940, and his doctorate in physics from Ohio State University in 1951.

Following graduation from Purdue in 1940, Dr. Mueller joined Bell Telephone Laboratories where he conducted television and microwave measuring experiments and pioneered in measurement of radio energy from the sun, in microwave propagation, and in design of low-field magnetrons.

He was a professor of electrical engineering at Ohio State from 1952 until he joined Space Technology Laboratories in 1958.

Dr. Mueller is a fellow of the Institute of Electronic and Electrical Engineers and is a member of the Air Force Association, the American Association for Advancement of Science, the American Physical Society, and the American Geophysical Union.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Convair Suggesters to Get Pins For Approved Cost-Saving Ideas

A series of award pins have been created for recognition of Convair division employes who consistently contribute to the Value Control/Cost Reduction/Employe Suggestion program.

All value control projects, cost reduction projects, and Employe Suggestions approved after Dec. 5 will count toward the Cost Reduction Achievement Award pins to be presented for each five approved submittals over a two-year period.



NEW AWARDS—Karen Little, Dept. 524-5 secretary, holds a card with new Cost Reduction Achievement pins.

The approved submittals can be in any combination of employe suggestion, cost reduction, or value engineering change proposals.

Each pin has a number representing the number of approved submittals and the words "Convair Cost Reduction Achievements."

The five-credit pin is lavender and white with an amethyst, the 10-credit pin is green and white with an emerald, the 15-credit pin is blue and white with a sapphire, the 20-credit pin is red and white with a ruby, and the 25-credit pin is all black with a diamond.

Ed Heller, manager of cost reduction and value control, said he expects at least 65 five-credit pins and seven 10-credit pins to be given out the first year, based on past employe participation in the cost reduction program.

Heller said he expects the first pin to be awarded in three or four months. The presentation may be sooner if the pins provide an incentive and number of submittals increase, he said.

Long Time No See

Field Service Rep Returns To Base, First Time Since '59

Joe Gallant, a Convair division Dept. 058-0 field service representative for F-102 aircraft, put on his round red, white, blue and black Convair badge and started to report in at Lindbergh Field plant for work for the first time in 10 years Dec. 3.

But getting in wasn't simple. A guard at Overpass 1 wasn't sure who Gallant was—but did know the badge he was wearing was a few years out of date.

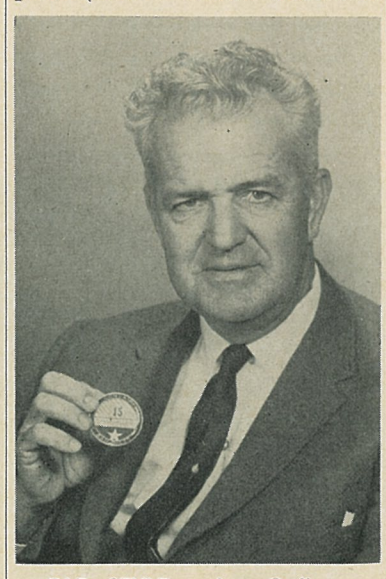
"Do you work here?" the guard asked. "Well, I work from here," Gallant replied. "Where did you get that badge?" the guard inquired. "Had it for years," Gallant replied.

Gallant's employment with the company was verified later at the Lindbergh Field identification office and he was issued a temporary badge while a new one with his picture on it was being prepared.

He then waited in the visitors' lobby until R. E. Sommers, chief of field service and service engineering, sent an escort.

"The last time I was here, just before taking a new assignment at Kelly AFB in San Antonio about 10 years ago, our office was over in the 'rock' (now Port of San Diego headquarters)," Gallant recalled. "A lot of things have changed."

Gallant joined Convair in 1956 after seven years as an Air Force pilot (he's a retired lieutenant colonel in the USAF Reserve) and has been assigned for 13 years to F-102s in Air National Guard units in Michigan, Texas, Connecticut, and Maine.



OLD STYLE — Joe Gallant, a Convair division field service representative, shows old badge he found "out of style" when he returned to Lindbergh Field for first time in 10 years.

He's done a lot of flying with the ANG, too. When the F-102 squadrons have gone on temporary duty assignments or training exercises, he's been included as one of the group.

"As a field service representative, you 'are' the company," he said. "You know the airframe and the equipment, and when there's a problem you have to provide the answers."

Airplanes have been Gallant's hobby as well as his job.

He built one of his own design, which proved a bit tail heavy, in 1948 and later owned a Knight Twister. About four years ago he built a biplane with a 125-horsepower engine that he considers "a real tiger."

Gallant's next assignment will be as a field service representative with Fort Worth division.

Con-Trib OKs Year-End Gifts

Grants totaling $23,076.55 were approved by the Convair Employes' Con-Trib-Club committee during November and December.

Largest grant was $12,500 to the Brevard County, Florida, United Fund. Other grants were:

Salvation Army, $3.500; Tuberculosis and Health Association of San Diego, $2,500; Episcopal Community Service, $1,000; Saint Vincent daPaul Center, $2,000; Market Street Neighborhood Service Center, $500; Lompoc Girls Club (Vandenberg) $50; The Christian Business Men's Service Center, $1,026.55.

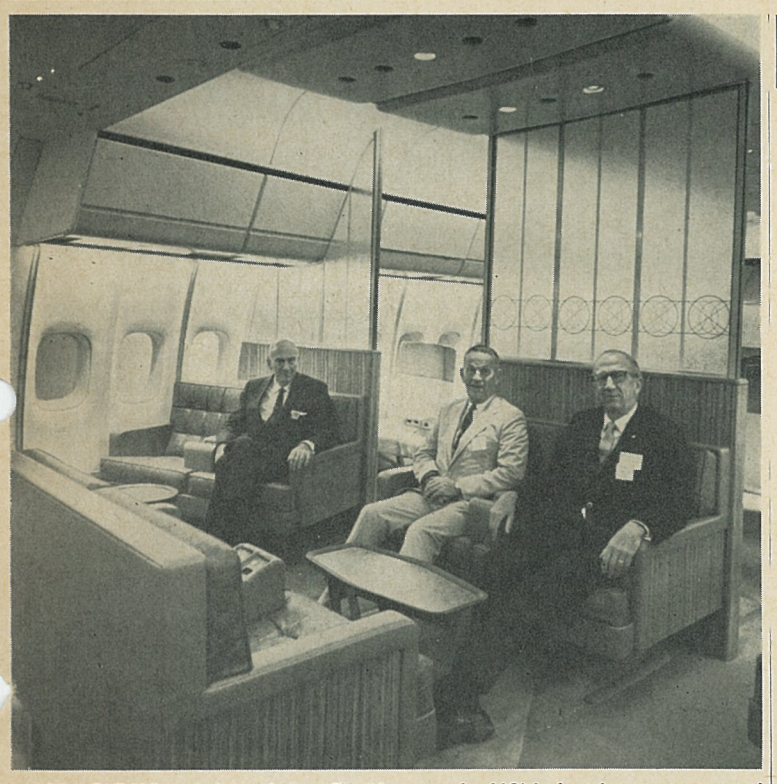
Week Remaining For Toy Donations

The reflection pool at Convair's Kearny Mesa plant is again being used to collect floating toys for needy children this Christmas.

Last year more than 175 toys turned the pool under the circular ramp in Bldg. 2 into a miniature Christmas pageant of all colors and shapes.

M. J. "Chili" Chilcote, plant security guard who heads up the collection, said the toys will be collected about Dec. 23 and turned over to the Salvation Army.

There is still a week left!



SPACIOUS—Adm. John T. Hayward, USN (ret.), center, and Edward H. Heinemann, right, both General Dynamics vice presidents, try out luxurious lounge accommodations in McDonnell Douglas DC-10 tri-jetliner cabin mock-up during recent visit to Douglas' Long Beach plant. At left is Leo J. Devlin, Douglas' assistant to the vice president of the military systems division. Convair division builds the 20-foot-wide fuselage for DC-10.

Davy Watson Grand Champion For Riding Events in 1969

The Convair Riding Club trophy for overall grand champion 1969 in gymkhana and equitation was presented to Davy Watson at the club's annual Christmas dinner.

The trophy is presented each year to the rider earning the greatest number of points during the year in both events in club horse shows at Missile Park.

In the gymkhana events, Sue Wallace received the top award in the 14 and under age group with Richard Boucher taking the 15 and over trophy.

In the equitation classes, Sandra Nash took the prize for the 12 years and under group, Susan Harmer won in the 13-17 age group and Judy Watson got the prize in the adult division, 18 and over.

For the first time, awards were given to participants in the year's horse shows who were not members of the club. Carla Haywood, Claire Doris, Pam Faulkner and Debbie Armour all received awards in this class.

A special award, a trophy with miniature microphone, was presented to Shirley Berry for her work in announcing shows during the year.

Club members also presented a gift to Commissioner Steve Berry who then presented 30 club members with jackets and patches.

CRA Radio Club Looks for 'Hams'

Convair Radio Club is compiling a roster of all licensed amateur radio operators working at Convair so all the Convair "hams" can be advised of club activities and other items of interest.

All "hams" are asked to contact Alex Halyburton, ext. 1840 KM, or Dennis Scannell, ext. 1332 KM.

In addition to operating the amateur radio station at CRA Clubhouse, members will participate in activities such as the Borrego Rough 100 Off-Road Race, Jan. 17-18.

Next club meeting will be at 7:30 p.m. tomorrow, Dec. 18, in the CRA Clubhouse.

Nulton, Courington Head Sailing Club

H. G. Nulton of Convair's Dept. 145-1 was elected commodore of the CRA Sailing Club at a meeting Dec. 3. T. C. Courington of Electronics-SD was elected vice-commodore.

Others elected, all from Convair, are Ward Waddell, Dept. 103-0, secretary; Ken Saum, Dept. 520-0, treasurer; and Chuck Fisher, Dept. 562-3, Gordon Getline, Dept. 585-0, and Charles McLean, Dept. 553-1, all directors-at-large.

Membership in the Sailing Club last month reached an all-time high of 439. Meetings, except for December, are held at 7:30 p.m. the fourth Wednesday each month in the CRA Clubhouse.

Club 'Buys House' For Show at Globe

Convair Management Club has reserved the entire Old Globe Cassius Carter Centre Stage Theater for the Royal Gambit performance this evening (Dec. 17).

Tickets are available at discounts at Kearny Mesa from Colleen, Bldg. 26, ext. 3211 KM, and at Lindbergh Field from Barbara, Bldg. 5 lobby, ext. 1405 LF.

Adventurers to See Slides on Railroad

A 35-mm color slide and synchronized-sound program on the Silverton narrow-gauge railroad in Southwestern Colorado will be presented by Jack Skimin of Electronics-SD at a meeting of the CRA Adventurers Club at 7:30 tonight (Dec. 17) in CRA Clubhouse auditorium.

Skimin photographed the Silverton, one of three remaining narrow-gauge railroads in the U.S., while on a 30-mile hike through the Animas Gorge in the San Juan Mountains.

The Silverton, known as "the train that wouldn't quit," has a reputation of being the only railroad showing a profit! Some slides of scenes along the Colorado River also will be shown.

All General Dynamics employes and friends are invited. Two Christmas hams will be awarded in a drawing.

Discount Tickets

The following tickets are available at all CRA and employe benefits outlets:

San Diego Gulls vs. the Salt Lake City Eagles hockey game Sunday, Dec. 21. $3 seats are available for $2.25.

The Andy Williams San Diego Open Golf Tournament, Jan. 19-24. $3.50 admission tickets are available for $2.75; $5 for $4; and $24 for $15.

In addition to the above, discount coupons for various cultural and sporting events are available from time to time.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Dec. 29. Call ext. 1071 LF or 3322 KM. All meetings are held in CRA Clubhouse unless otherwise noted.)

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ADVENTURERS—Meeting tonight (Dec. 17), 7:30 p.m.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—Lakeside 50-mile ride, Dec. 27, 7 a.m. starting point is KM parking lot.

CERAMICS—Meetings Tuesday and Thursday, 7-10 p.m. and 9 a.m.-noon.

CHORUS—Sing at Mercy Hospital, Dec. 19, 7 p.m. Rehearsals Mondays, 7:30 p.m.

GOLF—Cottonwood tournament, Dec. 26, 8 a.m.

GUN CLUB—Fun shoot, Dec. 28, 9 a.m., Gillespie Field gun range.

HEALTH CLUB—Open 9:30 a.m.-10 p.m. Monday through Thursday; 9:30 a.m.-9 p.m. Fridays; 10 a.m.-5 p.m. Saturdays; "Women only" weekdays, 9:30 a.m.-11 a.m.

JUNIOR SCIENCE—Workshop, Dec. 19, 7:30 p.m.

MINIATURE RAILROAD—Work sessions Saturdays and Sundays, CRA Missile Park.

MODEL HO RAILROAD—Work sessions each Tuesday 7 p.m., CRA Missile Park.

RADIO CLUB—Meeting Dec. 18, 7:30 p.m.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m.

SKI CLUB—Meeting Jan. 6, 8 p.m., South Bay Club.

TENNIS CLUB—Meeting tonight (Dec. 17, 7:30 p.m.

TOURS—European tours May 3-May 24. Travel meeting on these tours tonight (Dec. 17), 7:30 p.m.

TRAILERS—Meeting Jan. 6, 7:30 p.m.

WOMENS GOLF—Los Penasquitos tournament, Jan. 10.

European Tours Offered by CRA

CRA is sponsoring a special charter European flight directly from San Diego, departing May 3 and returning May 24. The flight will go to Copenhagen, Denmark, and return from London, England.

In connection with the flight, three package tour programs have been arranged.

The Grand Tour will visit Denmark, Germany, Switzerland, Austria, Italy, France, and England. The price of $695 includes round trip transportation, hotels, transfers, sightseeing, courier and guide service, and some meals.

The Scandinavia-British Isles Air/Sea Cruise tour will visit Denmark, Norway, England, Scotland, and Ireland. Cost per person of $875 includes round trip transportation, two overnight sea cruises, hotels, transfers, sightseeing, and courier and guide service.

The third tour group will visit Denmark, Spain, France, and England. The price is $845 which includes round trip transportation, hotels, transfers, sightseeing, courier and guide service.

A limited number of air-only reservations will be available.

All General Dynamics employes and families are eligible.

There will be a travel meeting at 7:30 p.m. tonight (Dec. 17) at CRA Clubhouse. Full details will be presented on all travel programs and color films shown and brochures distributed. Door prizes will be given and reservations for the trip will be accepted. For information call 1111 KM.

O'Brien, Halfacre Win Pistol Events

CRA Pistol Club shooters Don O'Brien and Jim Halfacre swept the one-two spots in a pair of match categories in Nov. 23 matches at Police Pistol Range.

O'Brien and Halfacre's tallys in Masters were 292-9x and 287-9x respectively and in Short National were O'Brien, 278 and Halfacre 269. They were followed by Warren Walker (251) and Jerry Lehrer (246) in the latter match.

Other scores were: Expert—Paul Pemberton, 280-7x; Lehrer, 279-3x; Sharpshooter — Veronica O'Brien, 207-1x; Frank Carranza, 190.

The club's Dec. 28 match has been cancelled because of the Christmas holidays. Next scheduled match is Jan. 11 at 9:15 a.m. at Police Range.

Convair Golfers Will Compete In 'Christmas Turkey Shoot'

Between 250 and 300 Convair division golfers are expected to take to the links on Cottonwood Country Club's two courses starting at 8 a.m. Dec. 26 in a CRA and Management Club-sponsored "Christmas turkey shoot."

In the 8 a.m. "shotgun start," golfers will begin play on all holes on the two courses simultaneously then will play around the course to their starting points.

Prizes valued at $500 to be awarded will include 16 turkeys, eight hams, and $125 in merchandise award certificates.

Terry Kell, tournament chairman for the Management Club, said three flights will be scheduled for men and one for women.

Major prizes will be awarded to low net and low gross golfers in each flight. Special merchandise awards will be given for closest-to-pin shots on the 9th and 18th holes.

Kell said the Dec. 26 tournament will give Convair golfers a chance to "show off their new Christmas gifts and golf gear" as well as to enjoy a day of golfing with friends. Both Cottonwood courses have been reserved for the tournament.

Additional information can be obtained by calling Kell, ext. 1465 LF, or Del Dimmitt, CRA Golf Club commissioner, ext. 511 LF.

Bob Bachman Winner Of Men's Net Singles

Bob Bachman defeated Jerry Leach 6-4, 6-1, to win the advanced men's singles in the final rounds of the CRA Tennis Club-Convair Management Club fall tennis tournament.

In the advanced men's doubles, Cecil and Rick Norwood downed John Cannau and Jack Bowers, 6-2, 6-4 for the title.

In the intermediate class, Jerry Leach took Ed Pawka 6-2, 6-4, in the men's singles but in the doubles, Pawka teamed with Mike Griggs to beat out Mike and John Fager 7-5, 6-1. Loretta Blevens defeated Amy Jarlet 22-21 in a round robin to take the intermediate women's singles title.

In the novice singles Bob Tutobene prevailed over Jeff Griffin 6-3, 6-1 while the novice doubles team of Andy Seidl and Jeff Griffin scored a 27-24 round robin victory over Manuel Fernandez and Chuck Griffin.

In the mixed doubles, Mary Cormier and Ed Marikle defeated Bert and Ann Mawhinney 7-5, 7-5.

The Tennis Club will meet at 7:30 p.m. tonight, Dec. 17, at CRA Clubhouse. A film, "Great Moments in the History of Tennis," will be shown.

For information call Bob Herold, ext. 2360 KM.

Chorus Will Sing For Mercy Patients

CRA Choral Club will sing at Mercy Hospital at 7 p.m. Friday (Dec. 19). The club will spend about two hours at the hospital, going through the halls singing Christmas songs.

Convair employes in the hospital or who know of employes in the hospital can contact Jim Pate, ext. 3034 KM, and have the club stop by specific rooms.

The club visited University Hospital Monday and will visit Naval Hospital tomorrow.

Bike Club Slates Last Ride of Year

CRA Bicycle Club members will go on their last ride of the year Dec. 27, starting from the Kearny Mesa parking lot and going to Lakeside.

The 50-mile trip will begin at 7 a.m. under the leadership of Myke Dickey. For information call Dave Lukens, ext. 2881 KM.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

VAFB Golfers Top Rocketdyne

A friendly rivalry between Convair and Rocketdyne golfers at Vandenberg AFB has resulted in Convair winning two straight matches and retaining a perpetual trophy.

The trophy was established several months ago and so far Convair is undefeated.

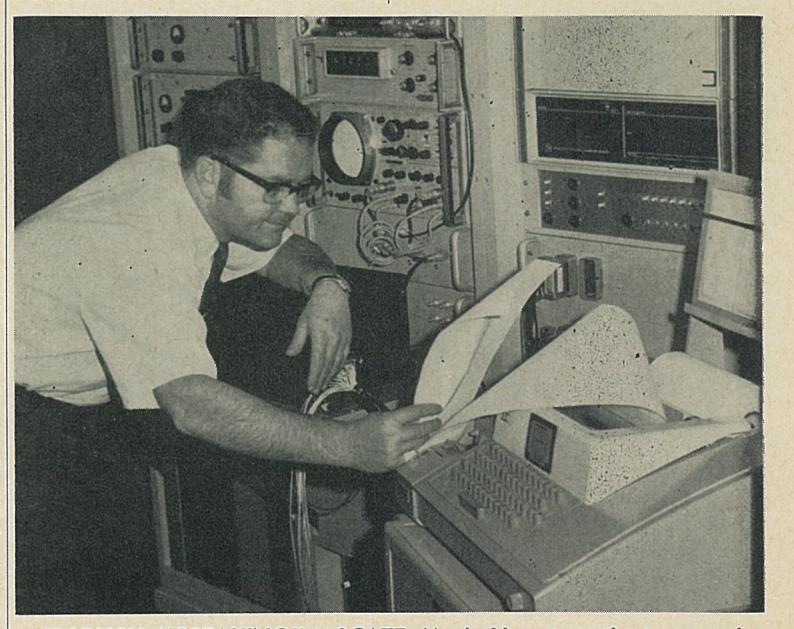
The latest victory came at the Black Lake Golf Course, Nipomo, when Convair won with a 76.2 net average against Rocketdyne's 78.4.

First and second prizes for low score went to C. C. Blacksmith, Dept. 985-1, with 64 and V. C. Cardiel Jr., Dept. 985-4, with 67.

The next match is scheduled Jan. 18 at Rancho Maria Golf Course. For information call Art Moore, 864-2517 or 864-2522.

Commissioners Named For Sail, Gun Clubs

George Schmiedel, supervisor of recreation for Convair division, has appointed John Tsirimokos commissioner of the CRA Sailing Club and Frank Kemper and Warren Gatterman as commissioners of the CRA Gun Club.



ENGLISH "SPEAKING"—SCATE Mark V automatic test equipment designed by Electronics-Rochester accepts instructions in English rather than special computer language, reducing number of skilled personnel required for inspection and diagnosis of electronic equipment being tested. It will be used for field support of wide range of U.S. Army electronics equipment that will be operational in mid-1980s.



ENGINEERING MANAGEMENT—General Dynamics' annual engineering management meeting was held recently for first time at Canadair Ltd. in Montreal. From left are S. O. Perry, Corporate Headquarters; S. C. Mentzer, Electronics-Rochester; W. C. Dietz, Fort Worth; E. J. Behney, Electric Boat; Daniel Semels, Corporate Headquarters; S. B. Weiner, Stromberg-Carlson; W. J. Ruhe, Corporate Headquarters; E. H. Heinemann, Corporate Headquarters; C. J. Palmer, Quincy; W. J. Eding, Corporate Headquarters; W. J. Morrow, Pomona; F. D. Applegate, Convair; K. E. Van Every, Corporate Headquarters; and Harry Halton, Canadair.

New Corporate Report Film Wins Three National Awards

"The Company They Keep," new report film on the people and products of General Dynamics, recently has been awarded three major industrial film awards.

Included were a first place in the Industrial Management Society film competition in Chicago, a first place in the Industrial Photography Magazine film competition in New York, and a second place in the Columbus, Ohio, Film Festival.

The Industrial Management Society's Robert H. Landes trophy, named after one of the organization's founders, was for first place in the "motivation in management" film competition.

Industrial Photography's "Indy" trophy, the seventh such award for a Convair division-produced film, was for first place in the industrial relations classification.

The Columbus Film Festival "Chris" plaque was for second place among business and industrial films. The festival is sponsored by the Film Council of Greater Columbus.

Robert Montague, chief of motion pictures and television for Convair, said "The Company They Keep" was designed to show the vast diversification of General Dynamics, its 100,000 employes, and its product lines.

The film is being shown to employe groups and in new-employe orientation programs throughout the Corporation. Prints also are being shown by commercial and educational television stations.

Raymond Hunter McPhee, director of film production for Corporate Headquarters, directed the award winning film, which was produced by Montague and included film provided by several General Dynamics divisions and subsidiaries.



TRIPLE HONORS—Bob Montague, left, chief of motion pictures and TV for Convair division, and Hal Reavely, production coordinator, display national awards received for General Dynamics film report "The Company They Keep." From left are Industrial Management Society trophy, Columbus Film Festival "Chris" award, and Industrial Photography Magazine "Indy" trophy.

Bright Future Seen For 'Fluidics' Operating in Hypersonic Spacecraft

Fluidics — a technology so new it isn't listed in most current technical dictionaries — is being put to work in an experimental anti-skid control system at Fort Worth division.

In fluidics, "fluids" such as air, water, nitrogen, gas — in fact, anything that "flows" — are used to operate systems.

"There are many potential advantages to a fluidic system, because you have no moving parts," said Bob Bose, project design engineer in advanced design. "This means the system will be lighter and more reliable than many aircraft systems.

"Even more importaant, a fluidic system should prove to be tougher and capable of operating under higher temperatures—possibly as great as 4,000 degrees F. Most aircraft systems must usually be cooled to below 300 degrees F."

Because of these factors, fluidic systems have great potential for use in hypersonic space vehicles, which create extremely high temperatures.

The fluidics system used on the division's experimental anti-skid control works roughly like this.

An air stream in the system is produced by a pressurized nozzle. The air stream passes through a series of fluidic flow-control devices and is amplified as it does so.

"We've known for a long time that fluids will follow certain paths under given conditions," Bose said. "Now we're controlling these flow patterns with various air inputs along the flow path.

"We know, too, that the air flow can be amplified as it passes through these control devices. For example, an air stream of one pound per square inch magnitude will be increased to 7 psi as it passes through the first device, to 49 psi as it passes through the second one, and so forth — a sort of cascading effect."

A fluidic control system like the one in the anti-skid prototype can perform the required braking functions with no moving parts, resulting in a highly reliable system.

"The system saves weight," Bose said, "since many valves and interface devices can be cut out."

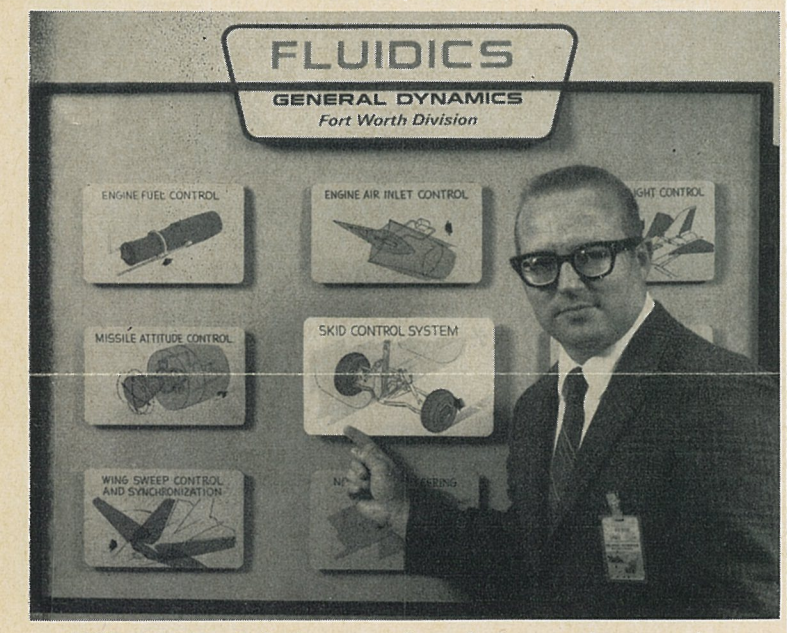
But perhaps the biggest single advantage for the aerospace industry would be its toughness and ability to function in extreme environments of temperatures, vibration, shock and radiation.

The integration of fluidics with present systems should extend the operating environmental range of future aerospace vehicles.

Bose said the fluidics technology was "launched" in earnest about a decade ago in the U. S. Army's Harry Diamond Laboratories in Washington D. C.

Since that time, Bose says, a number of experimental programs have been carried out and production applications have been started. Fluidics is being proposed for machine-tool applications to decrease maintenance.

Just how practical the fluidics technology may prove in the aerospace industry will probably be answered in the next few years.



FLUID DRIVE—Bob Bose, project design engineer, points out some of proposed applications of fluidics technology at Fort Worth division.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

TALMADGE R. LILES (1959) from Convair division to Electronics-SD as senior engineering writer; **ELWOOD C. DAVIS JR.** from Electronics, Rochester to Stromberg DatagraphiX as branch service manager; **DAVID E. HAUSKINS** (1967) from Convair to EDP programmer, DatagraphiX; **JOHN W. WHITE** (1958) from Electric Boat to Convair as senior wage and salary analyst; **JOHN V. DONAHUE JR.** (1964) from Electric Boat to labor relations representative, Convair; **ROBERT L. FAGAN** (1953) from Convair to DatagraphiX as customer engineer; **CHAUNCEY F. CLARK,** from Pomona to foreman, Convair; **ARTHUR E. DIVINE** (1959) from Convair to Fort Worth; **GILBERT SOILEAU** (1968) from Convair to Fort Worth; **JAN B. SHEPHERD** (1966) from Electronics-SD to Stromberg DatagraphiX as customer engineer; **LACADIO B. ESPINOSA** (1955) from Convair to senior engineer, Electronics-SD; **ARTHUR I. DOW III** (1964) from Pomona to Electronics-SD as contracts administrator; **PAUL A. ROGERS** from Quincy to customer engineer, DatagraphiX; **EDWARD C. KING,** from Fort Worth to customer engineer, DatagraphiX; **DOROTHY J. PAGE** (1957) from DatagraphiX to Electronics-SD as configuration control specialist; **VERNON R. PIETERS II,** from Convair to financial analyst, DatagraphiX; **GEORGE P. HIMEL** from DatagraphiX to Electronics-SD as senior buyer; **JOHN S. SULLIVAN** (1959) from Convair to senior engineer, Electronics-SD; **ROBERT E. McLEOD,** from Convair to planning and control analyst, Electronics-SD; **HAROLD O. STORY,** from Convair to Electronics-SD as senior quality control engineer; **CARL W. MURTOMAKI,** from DatagraphiX to configuration control specialist, Electronics-SD; **JOHN J. WOKULUK** (1951) from Convair to Electronics-SD as engineering drawings checker; **GARY L. TRUSHINSKI,** from DatagraphiX to Electronics-SD as buyer; **LEWIS R. HUGHEY** (1969) from DatagraphiX to quality control engineer, Electronics-SD; **BERNARD A. BLOEMENDAAL,** from DatagraphiX to quality control engineer, Electronics-SD; **KEITH D. BOYER,** from DatagraphiX to Electronics-SD as senior planning and control analyst.

$50 Billion Contracts For Ships Predicted

Shipbuilding revenues will rise to unprecedented peacetime heights in the 1970s, according to a spokesman for the American shipyard industry.

Edwin M. Hood, president of the Shipbuilders Council of America, speaking at an investment seminar in New York City, predicted that contracts approximating $50 billion will flow to American shipyards and marine component manufacturers in the decade ahead.

"These prospects include the full spectrum of shipyard activities. With better than 50 per cent of the U. S. Navy composed of ships 20 years of age and older . . . with nearly 75 per cent of the American merchant marine composed of ships 20 years of age and older, a shipbuilding program in both categories is inevitable. And, until new ships are on the line, or in operation, the opportunities for repairs and conversions to older ships cannot be discounted.

"In addition, the discovery of oil on the North Slope of Alaska holds the promise of an entirely new market for shipping and ships."

In assessing future naval ship work, Hood noted that as against the $1 billion per year funded for such purposes in each of the past two years, $3 billion has been authorized for the current fiscal year. And he pointed out that the Secretary of the Navy has stated that the continued effectiveness of the Navy will require $3.5 billion annually for ship construction and conversion during the next decade.

President Nixon's new program to restore the United States as a first-rate maritime program calls for the subsidized construction of 30 merchant ships annually for a 10-year period, Hood said. This rate of orders would nearly triple the annual average of recent years and aggregate $6 billion over the 10-year period.

The Alaskan oil discovery, he said, could generate contracts for as many as 40 or more tankers ranging in sizes up to 250,000 dwt (deadweight tons). The shipyards' spokesman said that $2.4 billion in tanker construction contracts are envisioned by his industry during the next decade.

Summing up, Hood said:

"Putting these separate forecasts together, the total shipbuilding market for American shipyards and American ship component manufacturers in the 1970 decade could approximate $50 billion. Of this amount, as I have indicated, $6 billion could be expended for merchant ships other than tankers, $35 billion for naval ships, and $2.4 billion for tankers. Another $6 billion in ship repairs of all types and shipyard auxiliary activities could also be anticipated."

